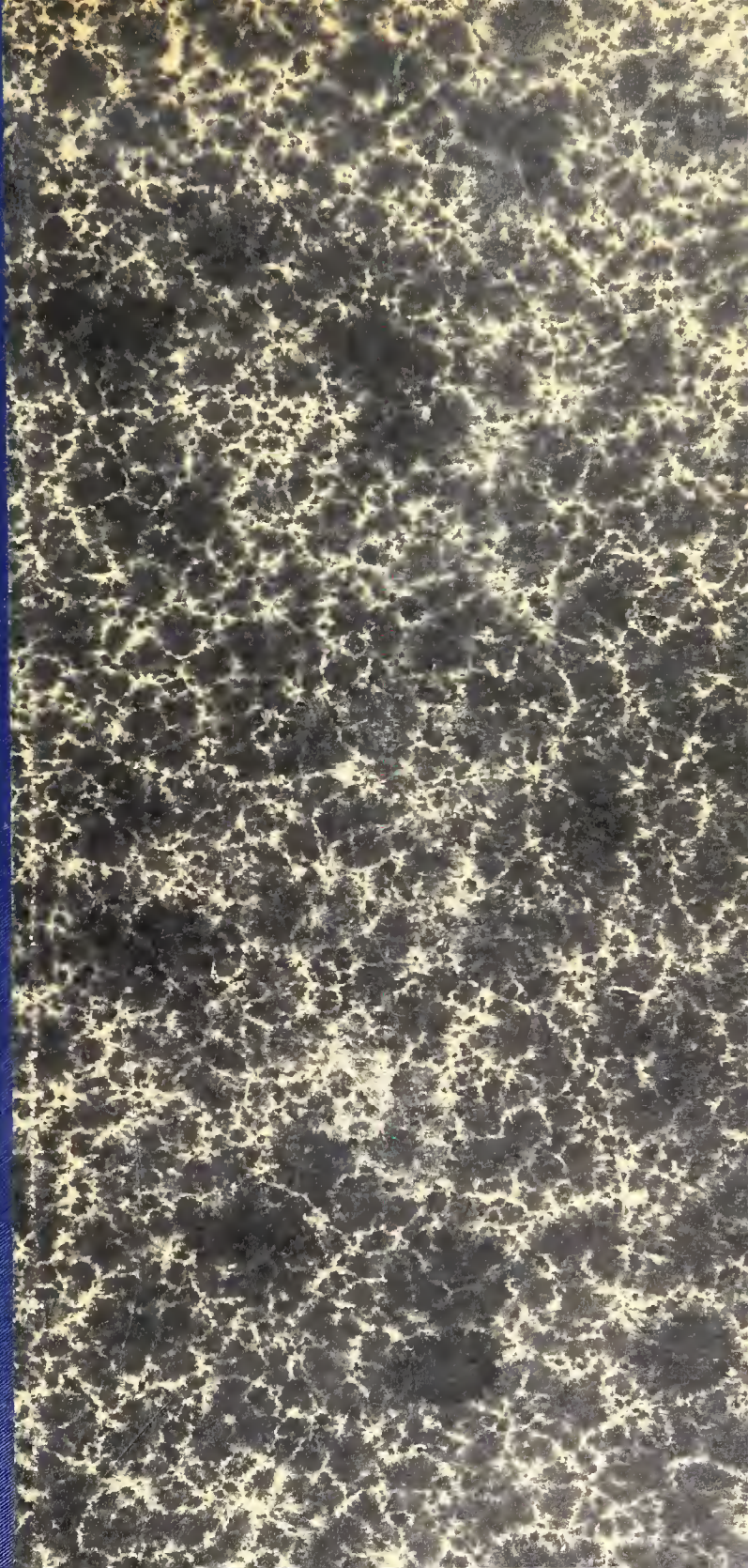


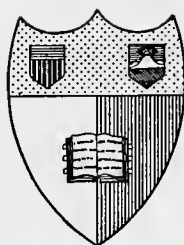
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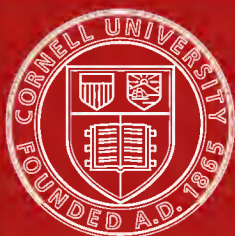
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Interest Factors in Primary Reading Material

By
FANNIE WYCHE DUNN

Submitted in Partial Fulfillment of the
Requirements for the Degree of Doctor of
Philosophy, in the Faculty of Philosophy,
Columbia University

Published by
Teachers College, Columbia University
NEW YORK CITY
1921

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Only by the coöperation of many schools, teachers, and students of education has the study here reported been possible. Graduate students of Teachers College, of Johns Hopkins University, and of the University of Illinois shared in the necessary but tedious work of ranking samples of children's reading matter for interest and interest elements; fifteen New York City public schools and the Horace Mann School of Teachers College permitted the use of their primary grades for testing purposes; supervisors in the public schools of Petersburg, Virginia, and Los Angeles, California, and in the training schools of the educational department of the University of Arkansas, and of the State Normal Schools at Warrensburg, Missouri, and Farmville, Virginia, personally gave or directed the giving of tests in their schools; members of the faculties of Teachers College, Johns Hopkins University, and the University of Illinois presented the problem to groups of their students and secured their coöperation.

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FANNIE WYCHE DUNN

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CHAPTER I

STATEMENT OF THE PROBLEM

Interest is commonly recognized as a potent, even an essential element in human accomplishment, and specifically in human learning. Historic educational practices are condemned, which, through inflicted penalties and pains, made it to the interest of pupils to apply themselves to the lesser evils of books and study. Criticism falls also upon the selection of subject matter for instruction without consideration of its inherent interest for the learner, thus necessitating the use of extraneous motives or incentives.

In each case the basis of criticism is the wastefulness attendant upon divided attention. With the sum of human attainments ever mounting, and a commensurate increase in the knowledge and skills necessitated by an ever more complex civilization, it becomes important to consider economy of time and effort, together with excellence of product, in education as in any other modern enterprise. To this end it is essential that education be so organized as to utilize existing interests and develop those which are potential, thus harnessing the forces of native tendencies and integrating them for desirable ends.

That makers of reading textbooks are alive to the importance of interest in the selection of subject matter is evidenced by expressions like the following: "The subject matter of this series . . . is full of incident and action. It enlists at once the liveliest interest of children. . . ."¹

"The reading matter of this volume has been chosen with deference to the taste of children as manifested by many generations of devotion to Mother Goose and the folk tales of the nursery."²

"It is believed that the familiarity of many of the selections is a guarantee of the child's desire to read them again."³

"This book is based upon the belief that interesting material is the most important factor in learning to read; that the keynote of interest is the story element, the plot."⁴

¹ Aldine. *Primer*, Introduction.

² Baker and Carpenter. *First Year Language Reader*, Preface.

³ *Ibid.*

⁴ Elson-Runkel. *Primer*, Introduction.

"Experience proves that all children are interested in and enjoy the simple folk tales."⁵

"In order that the pupil may be animated by the most effective of all stimuli, interest, the authors have based their method upon a collection of legends and folk tales."⁶

"The child at this stage [third grade] is in the golden age of pure fancy. In consequence, stories which appeal to his imagination are best suited. . . . However, the world of reality should not be overlooked."⁷

"While it is not assumed that the third year in school is the only year in which children like the fairy tale, it is the year in which they can read the greatest amount of fairy lore with pleasure."⁸

"No doubt the greatest delight of children is found in reading what they have previously learned orally."⁹

It is not, however, sufficient to recognize the importance of the element of interest in economical and effective education. To know what is good to have is of no avail unless one knows also how it may be obtained. To what extent are these statements of textbook makers matters of knowledge, and to what extent are they no more than opinion, with only empirical evidence as basis? Only in so far as they are demonstrable or demonstrated fact is it secure to use them as criteria in determining the subject matter of the chief or only textbooks of primary grades.

It is to discover such facts that this study has been undertaken. It attempts to answer, at least in part, the question: What are the elements in primary reading material that are of interest to children in the first three grades of the elementary school?

⁵ Free and Treadwell. *First Reader*, Preface.

⁶ *Progressive Road to Reading*. Book One, Introduction.

⁷ Elson. *Primary School Reader*. Book Three, Introduction.

⁸ Baker and Carpenter. *Third Year Language Reader*, Preface.

⁹ Cox, J. H. *Literature in the Common Schools*.

CHAPTER II

SUMMARY OF PREVIOUS STUDIES

A search into the literature of the subject reveals that whereas within recent years various studies have been made of the reading interests of children, none of them has been within the field of the primary grades. The investigations of Votrovsky, Wissler, and Barnes may be cited as the most noteworthy which approach this field.

Clara Votrovsky¹ made "an effort to ascertain in some measure the general reading tastes of school children before any organized effort has been made to direct it." The study was a local one, carried on only in the schools of Stockton, California. Children from the ages of nine to nineteen were asked the following questions:

1. a. Do you take books from the Public Library?
b. If so, how often?
2. a. What was the name of your last book?
b. Why did you take it?
c. How did you like it?

Answers were received from 604 boys and 665 girls. They showed that "juveniles" and "fiction" together comprised 64% of the boys' lists and 75% of the girls'. The remainder were distributed among history and historical biography, with 15% of boys and 10% of girls; literature and literary biography, 4% of boys and 7% of girls; travels, 4% of boys and 3% of girls; science, 7% of boys and 2% of girls; and miscellaneous, 6% of boys and 3% of girls. In the case of the nine year old children, "juveniles" made up 100% of both boys' and girls' lists. "Children," says Miss Votrovsky, "evidently consider the library not as a storehouse for knowledge, but as a storehouse for stories, and one cannot help but wonder whether children who live so largely in the imaginative world are not apt to lose sight of the beauties and enjoyments of real life. On the other hand, it must be remembered that the story, by broadening the horizon and bringing into it new associations, serves as one of the most effective

¹ Votrovsky, Clara. "Study of Children's Reading Tastes," *Ped. Sem.*, Vol. 6, pp. 523-535.

helps to growth (if the stories are well chosen) that is open to children."

Answers to the question, "How was the last book liked?" indicate "that the critical faculty is not developed early in life." Of the 90% of boys and 88% of girls who answered the question, 80% and 70% respectively replied, "Very much." Only 5% of boys and 10% of girls responded, "Not at all." "The world is all so new to children, they are so eager to gain new experiences, that if a book along the lines in which they are interested has only some little mark of merit, it is sure to please." This the author finds "encouraging in one sense, for if children are so easily pleased it cannot be difficult to direct their tastes for what is good."

Certain indications appeared as to sex differences. Whereas 52% of girls say they took a story because it was about children and generally about girls, only 12% of boys gave the reason "about children" for their selection. Moreover, 71% of the books chosen by girls, and only 21% of the books chosen by boys, had names suggestive of children. Some mentioned by girls were in regard to boys alone, but not one given by a boy was merely in regard to girls. "Because it was exciting" was given as a reason for choosing a book by 24% of girls and 76% of boys. "Boys' tastes in general are well illustrated by a boy of 12, who states that he took *The Moon-hunters* because he liked to read about the wilderness of the world; while the following sentiment by a girl of 14 is shared by a large number of others, 'I like *Quinnebasset Girls* because it tells about the thoughts and feelings of girls.'"

Wissler² studied interests of children in the reading work of the elementary schools by means of a questionnaire used in a number of Indiana schools. Three questions were asked as follows:

1. Write the subjects of all the lessons that you remember from the Reader you used last year.
2. Which one did you like best? What was it that you liked?
3. If you were taken to a book store and told that you might select just one book for your own, what would you take?

Results were obtained from about 2100 children, and used from 1950, 1060 of whom were girls and 890 boys, of third reader grade and above, about 500 children to each reader. Little indication as

² Wissler, Clark. "Interests of Children in the Reading Work of the Elementary Schools," *Ped. Sem.*, Vol. 5, 1895, pp. 523-540.

to interest was obtained from the list of second reader lessons recalled by third grade pupils, for only one was not recalled, while the twenty-two selections which were recalled by not more than 5% were of a rather miscellaneous character. The bulk of them were made up, however, of "mere instructive lessons, the moral and its setting, and abstract poems concerning duty, happiness, love of nature, etc."

Fourth grade pupils failed to recall a larger per cent of third reader lessons, practically all of these being of the same general types as those which had failed to impress the pupils of the lower grade. Other elements besides content in both grades entered into causes of recall, first lessons and continued lessons or long stories being in general well remembered. Interest values appeared to inhere in lessons especially natural or lifelike, or those "in terms of experience a child can realize in himself," both of these types being well recalled. Expressions of preference elicited by the second question indicated a decided preference for prose over poetry, 86% of the girls and 92% of the boys naming a prose selection as the one liked best of all. It should be noted that there were only 18 specimens of poetry to 47 of prose in the book studied. Similar interests revealed themselves in the answers of fourth grade children as to their third reader work. A marked difference in replies based on fifth reader study, where such poems as *Evangeline*, *Thanatopsis*, and *Snowbound* are read, leads Wissler to say: "Growth in interest in poetry is co-incident with age. . . . It is probable that young children are interested only in the rhythm of verse as found in rhymes of the Mother Goose type, and that real poetry receives little recognition before the adolescent period." As ground for this conclusion as to young children's interest he says: "Poems in the Second and Third Readers are chiefly those of sentiment and thought, but the preferences fall upon those in which rhythm is prominent, as:

Two little kittens, one stormy night,
Began to quarrel and then to fight

[Popular in the Second Reader.]

and

Now, such a story I never heard,
There was a little shivering bird.

[Popular in the Third Reader.]

Stories of daily life and stories of animals lead all others in both

second and third readers, animal stories in the second reader being preferred by 19% of girls and 21% of boys, and in the third reader by 12% of girls and 14% of boys; stories of daily life in the second reader preferred by 39% of girls and 41% of boys, in the third reader by 28% of girls and 24% of boys. Other classes considered were fables, stories of heroism, biography, stories of adventure, information, moral precepts, and description, percentages of preference varying among these from 0% of both sexes for adventure in both third and fourth grades to 12% of girls and 11% of boys for biography in the third reader.

The main reason given for preferences was trueness to life, cited by 39% of boys and 33% of girls for second reader selections and 27% of boys and 25% of girls for third reader. Other reasons given were classified under the general heads "interesting," "beautiful," "information," "moral lessons," and "heroic," moral lessons leading all the others with 13% of boys and 13% of girls in the case of second reader material, and 17% of boys and 14% of girls in third reader selections.

Of books that children would buy, fiction conspicuously leads, being preferred by 74% of fourth grade boys and 66% of fourth grade girls, and holding a large percentage throughout the grades. Other classes listed are poetry, biography, travel, history, religion, science, and humor. Travel is not mentioned by either third or fourth grade pupils, humor is named only by 1% of the boys in either of these grades. Next to fiction stands religion in the third grade, with 5% of boys and 8% of girls, and poetry in the fourth grade, with 9% of boys and 10% of girls.

"No marked sex difference appears either in preferences or in basis of preferences." However, an examination of the samples of fiction throughout the grades indicates that girls prefer "home life and every day thought and emotion," while boys like "adventure." Sex differences appear to increase with the grades. In general, the author concludes that "The literature most appreciated by pupils in the elementary schools is that which presents the true, the beautiful, the heroic, and the good in the same concrete way as the busy world around them. Fiction and poetry are the preferred forms."

Although the studies above described are open to question in several respects, they represent findings based on a sufficient number of cases to lend considerable weight to their percentages.

Barnes' *Studies in Education* have not always this merit. Note, for example, the suggestion, based upon a love story³ written by one nine year old girl: "Since the writer *is* independent, might we infer that this sort of story (about a 'delcit,' 'pane-bearing orphan') really appeals to a general interest in girls at least." Referring to this and another love story by another nine year old girl, Mr. Barnes says, "Both stories deal with idealized circumstances and details far removed from the actual life of the writers. Does not this seem to indicate that children's stories should not be pure realism?" He describes also⁴ the effect of *Little Men* on one class of children between the ages of nine and fifteen, to whom it was read aloud. The interests of girls were more sustained throughout the book; boys became less interested when chapters about Daisy and Nan were read. Boys did not like the pathos of the story, and asked to skip it, whereas girls listened as attentively to pathetic as to gayer parts. "Judging from this slight study," says Mr. Barnes in conclusion, "it seems safe to say that in the majority of cases a child's sympathy is with a child like himself."

Barnes reports also a study of children's recollections⁵ of matter read and draws from it conclusions as to their interests in much the same manner as Wissler. His cases are much more limited, however, being confined to 101 papers. He found children the subjects in 36 cases, animals in 23, and fairies in 15. "Bible stories are separately listed; but here again animals are prominent, the favorite being Daniel's lion, Jonah's whale, and the memorable procession of Noah." This he presents as "one more slight piece of evidence that the child lives in a world of children where animals take second place and fairies hold their own, but grown people have slight recognition."

To some extent the studies of Votrovsky, Barnes, and Wissler agree in conclusions. Both Wissler and Votrovsky find indications of preference for fiction and little inclination toward poetry. Both present evidences of a sex difference in regard to books about children, especially about girls. Barnes and Wissler agree that animals are the subjects of special interest.

No one of these studies concerns itself with the first grade and

³ Barnes, Earl. *Studies in Education*, Two Love Stories Written by Children, Vol. I, pp. 24-26.

⁴ *Ibid.* How Children Judge Character, pp. 94-97.

⁵ *Ibid.* Study in Reminiscence, pp. 58-61.

there is little reliable evidence as to second grade. Miss Votrovsky's subjects were children nine years old and above, and hence hardly likely to be below third grade advancement. Wissler's conclusions as to second grade children's likings were derived from third grade pupils' recollections of their second grade reading experiences — a very limited field, and the validity of these conclusions is conditioned upon the unproved premise that recall and interest are closely correlative.

In fact, the legitimacy of practically all the conclusions of the studies cited is questionable. The "post hoc, ergo propter hoc" fallacy, and the probability of partial selection, either or both enter into every one. Children's selections of reading matter in Miss Votrovsky's study were in part at least determined by the public library's collection of books within their reading ability, which probably included very little for nine year olds except the "juveniles" which 100 per cent of them read. The choice of books to buy, expressed in Wissler's returns, certainly was largely influenced by the environment of the children studied. Books recommended by adults or other children, books seen on shop counters or in store windows, in their own or others' homes, or in the school library, and books already read by them, comprised the entire field within which it was possible for them to choose. That travel was not mentioned by third or fourth grades might be entirely due to the absence of any book of travels in their environment, or at least of any within their reading capacity. The presence of religious books, coupled with their prestige derived from adult approval, might as easily account for their conspicuous mention under the conditions of the study.

The confusion of one cause of like or dislike with another which is intimately bound up with it is probably an even larger source of error than partial selection. Wissler's conclusion, for example, that it is rhythm which young children like in verse is hardly warranted by the two samples which he cites, for their interest might as well or better be accounted for by the fact that both are about animals, kittens and a bird, or by the further fact that each is a story in verse form, and a "story of daily life" at that. The latter would also account for the rise in liking for poetry in the fifth grade, where story poems like *Evangeline* and *Snowbound* are found instead of "those of sentiment and thought," "abstract poems concerning duty,

happiness, love of nature, etc.," which make up the main offerings of second and third readers.

Contradictory indications are afforded by the 0% of boys and girls in third and fourth grade who prefer stories of adventure, and by the conclusion reached through analysis of the samples of fiction in the same study, that throughout the grades boys prefer adventure stories over all others. Either both of these are mere chance results, or else a complicating factor or factors influence one or both so as to obscure the truth. So many elements enter into the constitution of each book or selection that it is unsafe to fix arbitrarily upon any one quality as a basis for classification and generalization.

In view of the limited number of studies in the field of the primary grades and the questionable nature of their conclusions, it may be said that they afford practically no reliable information on the interest elements of primary reading material.

CHAPTER III

THE CONSTITUTION OF PRIMARY READING MATERIAL OF THE PRESENT DAY¹

Preliminary to an evaluation of the interest factor in primary reading material a knowledge of the nature of that material is essential. To afford an index of this there was prepared a complete table of contents of the primers and first, second, and third readers of eight series in common use to-day.² One of the series examined had no primer, and of two of the others the third reader was not available, so that all told the number of books indexed was twenty-nine.

The total number of selections found in these twenty-nine books was 1043; the number of different titles was 749. Table I shows the distribution of these titles among different classes of reading matter and also among the different books.

Of the 749 titles, 573 occurred only once, 112 occurred twice, 35 three times, 15 four times, 7 five times, 4 six times, 2 seven times, and 1 eight times. This one, it may be noted, did not occur in all eight series, being found twice in one series. Not a single selection appeared in each series.

It is evident, therefore, that there is as yet no agreement as to minimum essentials in reading matter for the primary grades. The range of selections with which a pupil becomes acquainted in his primary reading depends altogether upon the reading series that happen to be adopted in the school system to which he belongs. Much more agreement exists as to the classes of reading matter than as to the particular samples within each class. Poetry and fictitious stories make up all but 40 of the total 749 titles, and all but 42 of the 1043 selections, repetitions included.

¹ Since this study was made, reports have been published by other investigators of the contents of school readers, as follows: Woody, C. "The Overlapping in the Content of Fifteen Second Readers," *Journal of Educational Research*, II, 1920, 465-474; and Starch, Daniel, "The Contents of Readers," *The Twentieth Yearbook of the National Society for the Study of Education*, Part II, 1921, 145-151.

² *Aldine Readers*, Baker and Carpenter's *Language Readers*, Elson, *Primary Readers*, Free and Treadwell's *Reading Literature Series*, *Progressive Road to Reading*, the *Riverside Readers*, Summer's *Readers*, and Young and Field *Readers*.

TABLE I

SHOWING THE CLASSES OF MATERIAL IN 29 PRIMARY READING BOOKS, THE
NUMBER OF DIFFERENT TITLES OF EACH CLASS, AND THE
NUMBER OF RECURRENCES OF THE SAME TITLE

Classes of Material	Different Titles	Frequencies								Total Selections
		1	2	3	4	5	6	7	8	
Aesop and Other Fables	45	22	13	5	3	1	1	..	..	86
Bible Stories	3	2	1	..	..	..	..	..	..	4
Biographical and Historical	30	29	1	..	..	..	..	..	..	31
Geographical	5	5	..	..	..	..	..	..	..	5
Observations of Bird and Animal Life	2	2	..	..	..	..	..	..	..	2
Folk and Fairy Tales	153	111	28	4	5	2	1	1	1	230
Legend and Myth	24	19	4	0	1	..	..	..	..	31
Miscellaneous Stories	113	108	3	1	1	..	..	..	..	121
Miscellaneous Poems	251	206	28	12	3	1	1	..	..	321
Mother Goose	70	37	24	6	1	1	0	1	..	119
Rossetti's Poems	27	20	4	1	0	1	1	..	..	42
Stevenson's Poems	26	12	6	6	1	1	..	..	..	51
Grand Total	749	573	112	35	15	7	4	2	1	1043

Poetry, which constitutes 51% of all selections, has been subdivided in this tabulation, into Mother Goose rhymes, poems by Rossetti, poems by Stevenson, and miscellaneous poems. Of the last named there are 251 samples, of which 206 occur only once and only 5 occur more than three times in the eight series. Rossetti is represented by 27 different poems, 20 of which are not repeated, and only 3 are found more than twice. There are 26 titles from Stevenson's *Child Garden of Verses*, with a slightly larger percentage of repetitions, 12 occurring once, 6 twice, 6 three times. Of Mother Goose there are 70 different rhymes, only 3 of which are included in more than three of the series.

Of fictitious stories 335 different titles appear, making up with their repetitions 45% of the total number of selections. Folk and fairy tales furnish 153 different specimens, Aesop and other fables 45, legend and myth 24, and miscellaneous stories make up the remaining 113. Some of the miscellaneous stories might be included under the other categories, especially under folk and fairy tales, but

they were classified otherwise because it was not quite certain to which group they did belong. As with poetry, there is here little repetition, only five of all the miscellaneous stories and the same number of legends and myths being found more than once. Among Aesop's fables and the folk and fairy tales there is a greater degree of repetition, but the number of occurrences does not average two to a title.

The amount of matter intended for belief is almost negligible. Three Bible stories are found, one of them in two series. There are 30 titles from historical or biographical matter, of which only one occurs twice. All told there are two selections which may be classed as observations of bird or animal life, and 5 titles in the field of geography. None of these are repeated.

It should be noted that this description of contents omits material made up for purposes of teaching the rudiments of reading. The amount of such material in the primers of the series examined varies from 0% in one series to 97.6% in another. This "made material" does not admit of classification under any of the categories employed and of course it differs with every series.

The grade in which a selection is used is another matter in which there is no apparent standard. Table II, including all the titles in the eight series which occur three times or more, indicates the extent of divergence in this respect.

TABLE II
SHOWING ALL TITLES WHICH OCCURRED THREE TIMES OR MORE IN 29 PRIMARY
READERS OF EIGHT SERIES, WITH THE READERS IN WHICH
THEY WERE FOUND

Selection and Class	Readers in which Found
Aesop or Other Fables:	
Belling the Cat	2, 2, 1
The Wind and the Sun	2, 1, 2
The Ant and the Dove	1, 1, 2
The Boy Who Cried Wolf	3, 2, 1
The Dog and His Shadow	2, 1, 2
The Fox and the Crow	2, 3, 1, 2
The Hare and the Tortoise	2, 1, 2, 1
The Tortoise Who Liked to Talk	3, 3, 2, 1
The Lion and the Mouse	P*, 3, 2, 1, 2
The Town Mouse and the Country Mouse	P, 3, 1, 1, 1, 2

*P = primer.

Bible Stories:

No sample occurring three times.

Biographical and Historical Selections

No samples occurring three times.

Folk and Fairy Tales

Hans in Luck	2, 2, 3
The Little Fir Tree	2, P, 3
The Twelve Months	2, 3, 3
The Elves and the Shoemaker	2, 2, 3, 2
Boots and His Brothers	2, 3, 2, 1
The Three Billy Goats Gruff	1, 1, P, 2
The Bremen Band	2, 1, 2, 2
Chicken Little	1, P, 1, 1,
The Little Pine Tree	2, 1, 2, 1, 2
Sleeping Beauty	3, 3, 2, 3, 2
The Three Pigs	P, 2, 1, 1, 2, 1
The Little Red Hen	1, 1, P, 1, 1, P, 1
The Gingerbread Boy	3, P, 1, P, 1, 2, 1, 1

Geographic Selections

No samples occurring three times

Legend and Myth

Ulysses and the Bag of Winds	2, 3, 2, 2
------------------------------	------------

Miscellaneous Poems

Fairy Folk, <i>Allingham</i>	3, 3, 2
The Bluebird, <i>E. H. Miller</i>	2, 2, 3
Sweet and Low	2, 3, 1
America	2, 1, 2
Do You Ask What the Birds Say?	3, 3, 3
Goodby to Summer	3, 3, 3
Baby Seed Song	3, 3, 3
Thanksgiving Day, <i>Child</i>	2, 2, 3
Rollicking Robin, <i>Larcom</i>	3, 3, 2
The Moon, <i>Follen</i>	1, 2, 1
Thank You, Pretty Cow, <i>Taylor</i>	2, P, 2
Lady Moon, <i>Houghton</i>	2, 2, P
The Lost Doll, <i>Kingsley</i>	2, 2, 2, 3
Twinkle, Twinkle, Little Star	2, 2, 2, 1
Daisies, <i>Sherman</i>	3, 2, P, 2
What Does Little Birdie Say?	1, 3, 1, 1, 1
Sleep, Baby Sleep	2, 1, 2, 1, 2, 2

Miscellaneous Stories

The Brave Tin Soldier	3, 2, 3
The Ugly Duckling	3, 3, 1, 3

Mother Goose Rhymes

See Saw	I, P, P
Pat-a-cake	I, I, P
Little Jack Horner	I, I, P
Baa, Baa, Black Sheep	P, I, I
Pussy Cat	I, 2, I
Blow, Wind, Blow	P, I, P
Little Bopeep	2, I, P, P,
Hushaby, Baby	I, I, I, I, P
Little Boy Blue	P, I, P, I, I, P, P

Observations of Bird and Animal Life

No samples occurring three times

Rossetti's Poems

Boats Sail on the Rivers	2, 2, 2
Sun Loving Swallow	3, 2, I, 2, 2
The Wind	2, 3, 2, 2, 2, I

Stevenson's Poems

The Wind	2, 3, 2
At the Seaside	2, I, 2
The Rain is Raining	2, P, 2
Singing	2, 2, 3
Farewell to the Farm	3, 2, 3
My Shadow	2, 2, 3
Where Go the Boats	3, 2, 3, 2
The Swing	I, 2, P, I, I

The variations in content and gradation indicated in the preceding pages are quite at odds with a statement as to reading curricula made by Professor Hosic in 1915:¹ "For almost a generation a sifting process has been going on which seems to have resulted to a remarkable degree in unanimity of choice of literature for the elementary school and even of uniformity of grading."

This statement was based largely on the results of a study by Bobbitt and others with the purpose of answering the question, "In what school grade should any given piece of literature be read?" The authors answered their question thus, "Obviously it ought to be in that grade where, as shown by practical experience, it works best." They hoped from examination of the courses of study in use in various states and cities to find where a given selection has

¹ Hosic, J. F. "The Essentials of Literature," *Fourteenth Yearbook, N. S. S. E.*, 1915, Part I, pp. 147ff.

tended to gravitate as the result of a process of experimentation which they considered country wide. General present practice in curriculum making hardly warrants their assumption. The "remarkable degree of unanimity" which their results indicated may at least as probably be the outcome of the easy process of imitation as of the difficult one of experimentation. Skillful advertising, institute work, and the limited amount of material available in form for class room use, all might account for a uniformity in the material listed in curricula, even if it were very far from being the best selection or the best gradation.

Hosic's conclusions from a later study² of reading texts are, however, absolutely in accord with the results of the investigation of primary reading content described above. Hosic reports the indexing of 22 complete series of readers, discovering approximately 4000 titles of which 2500 were named but once. No selection appears more than 19 times; 56 titles out of the 4000 appeared 10 times or more. "Only a dozen are included in two thirds or more of the readers indexed." 57 authors (or sources) are represented by 10 or more titles, Longfellow leading with 91, Stevenson and Shakespeare following with 72 and 69 respectively. Professor Hosic therefore concludes: "The most striking fact which this index presents is the lack of consensus of opinion as to what American children should read in school. The majority of the pieces which the editors of the 22 sets of readers have chosen appear but once. The effort has apparently been to get something 'different.' Yet these are basal, not supplementary readers. No educational principle of inclusion or exclusion can be traced which is in any sense common to as many as half the series.

"There is no clear consensus even as to the difficulty which the various selections may be supposed to present to the pupils. No piece mentioned five or more times is placed always in the same school-year or grade. The common range in such cases is four or more grades, and some pieces are placed in seven of the eight school years. . . .

"American educators apparently have at present no well-defined policy as to the content of school reading books."

² Hosic, J. F. "The Contents of School Reading Books," *School and Society*, Vol. XI, No. 267, Feb. 7, 1920, pp. 179, 180.

CHAPTER IV

THE CONSTITUTION OF PRIMARY READING MATERIAL IN THE PAST

If the content of primary readers to-day is not the result of a long continued sifting process, still less is it a matter of tradition fixed like so much of our school curriculum by historic precedent. Indeed, it is apparently but a stage in a development of over a century, during which the pendulum has swung to one extreme or another according to the trend of popular interest or pedagogical thought. Dissatisfaction with existing conditions has led to opinions as to means for betterment and the most ardently supported opinion has for a time at least gained ascendancy over all opponents.

The following brief survey of some of the tendencies which have been prominent during the past century has been summarized from Reeder's *The Historical Development of School Readers*.¹ Pierpont's series, the most important American series in the decade 1820-1830, was compiled upon the basis of literature as the proper field for subject matter. The writings of Patrick Henry, Webster, Everett, Irving, Bryant, and other American authors were freely drawn upon for material, the series being strongly American. Cobbs' Juvenile Readers, on the other hand, published in 1831, the first carefully graded series produced in America, aimed more at instruction and the immediate interests of the child than at literature and literary standards. In general, "early in the 19th century, piety, morality, patriotism, and literature form the staple of school readers." In 1824 there was published an Agricultural Reader which included in its scope "fundamental principles of agriculture, examples of good and bad husbandry, domestic economy, industry, neatness, order, temperance, and frugality." In 1827 a Historical Reader appeared. The McGuffey series published in 1850, "swept almost the entire field of human interest — morals, economics, politics, literature, history, science, and philosophy." In 1860 appeared the Willson series, whose characteristic feature was the information they furnished along all lines of science.

"It became strikingly apparent to students of the curriculum that

¹ *Op. cit.*, pp. 53-58.

some determining principle of selection must be found to rescue this branch from the hopeless chaos toward which it was drifting. What should be the central core of a reading book series? . The Willson series showed the absurd limit to which the utilitarian principle might lead and the necessity for finding the true center for this branch of the curriculum. In the struggle for central position literature gradually emerged from the conflict triumphant over those subjects which are confined within the limits of time and space. In the new series and supplementary readers which began to appear about 1883 literature took the field and has since held it against all comers."

Reeder's study is concerned with the development of readers in general. I have supplemented it for purposes of my own problem with an investigation into the contents of the primary books of a number of series published during the past century. Roughly, the books examined may be grouped in four chronological periods, (1) between 1824 and 1867, (2) between 1868 and 1887, (3) between 1888 and 1905, and (4) from 1905 to the present. These groupings have been made on the basis of the fact that the books within the limits set for any one group are more like each other than like those published before or after.

Twenty books were examined for the period from 1824 to 1867. At the beginning of all the primers the first sentences were made up of words of two or three letters, increasing to four or more letters, and then to multisyllabic words. Typical sentences are: "My son, do no ill. Go not in the way of bad men. Bad men go to the pit." "On we go. So do we. By me no. So at me. Go to it. Do as we do." "Is my ox to go in to it? Oh, no, it is I to go up." "Vain persons are full of the allurements of dress." "The philosophical infidel can never refer to him for authority." (The last three sentences are from the same book, appearing respectively on pages 26, 27 and 36.)

As soon as the subject matter of books of this period has any content at all it is in general moral stories, fables, and verse; devotional selections, either Bible quotations or stories, or such inspiring subjects as *The Funeral of a Little Boy*, *The Dying Christian to His Soul*, and *On the Shortness of Human Life*; or informational matter, usually on geographical and zoological topics. Occasionally material is found which is in use to-day. Examples of this are *The Discontented Pendulum*, *The Modest Violet*, *The Boy Who Cried Wolf*,

The Rat with the Bell, Little Drops of Water, The Boy at the Dike, Mary's Little Lamb, and a number of Mother Goose Rhymes.

Considerable information as to what textbook makers of this period think a primary reading book should be, may be found in the prefaces or introductions to their books, which contain numerous expressions of protest against existing conditions and suggestions for reform. Premature and indiscriminate scripture reading is criticised as resulting in mere word reading without thought, and an appeal is made for more interesting subject matter for children under 10 or 12 than Cicero, Lord Chatham, or "the lyric ode and plaintive elegy." One book registers a protest against fragments of words for children to read, when as a matter of fact they are "delighted with ideas." Another objects to the requirement that a child before beginning to read learn to spell four or five thousand words "scraped together as they commonly are, without regard to his understanding or his needs." Yet another avows its purpose to choose lessons adapted in language and matter to the children's capacities, and to select those suited to excite curiosity, afford harmless and rational entertainment, and to give variety, while at the same time imparting some valuable information or giving some useful moral lesson. The idea of variety is carried to a startling extreme by one author, who claims to have taken care to avoid repetition on the ground that it produces inattention in the learner, attention being enforced by mastering each word, once for all, as it appears.

Almost all these expressions indicate that to a considerable extent then, as now, the interests of children were in the mind of the textbook author. That the books are not interesting seems to be due to lack of knowledge of what is of interest to children rather than to a misconception of the importance of interest.

The period from 1868 to 1887 appears to be one of transition in both method and content. The content alone, however, will be discussed here. In most of the ten series of this period which were examined, the large part of the books consists of made up sentences or stories about topics assumed to be of interest to children, with some made up verse in the second and third readers. Some good verse is found in about half the books examined. Next in amount to the made up matter stand informational and moralizing selections. Classics are found in four books. Each of the following types

of material occurs in at least one of the books examined: child poems; stories of child life and activities; information about common things, such as plants, animals, stars; information about industries; lives of other peoples; biographical or historical anecdotes; Bible stories and verses; Aesop fables; Greek myths; Mother Goose; fairy and folk tales; proverbs and wise sayings; and stories suggesting things children can make. Here is evidently a very much wider range than that described in the preceding chapter as characteristic of present-day readers.

In the next period, from 1888 to 1905, for which ten representative series were examined, there is a decidedly greater emphasis on literary content. It was in the middle of this period that the *Heart of Oak* series appeared, and two other series which indicate the approved emphasis by their titles, *Stepping Stones to Literature* and *Graded Literature Readers*. The primers and first readers of this period are still largely composed of made up sentences designed to produce word mastery. This intent is avowed by one book: "No part of the purpose of this early work in reading is to train the child to get thought from the printed page." There is, however, a decrease in the percentage of made up matter in the primary books as a whole and especially of made up verse, of which there is practically none. There is a large increase in the number of child poems, good ones being found in about 50% of the books examined, though a few books have no verse at all. Classics, including myth, legend, fairy and folk tales, and fable, are also much more used than in preceding periods, constituting a very large part of about 25% of the books, and occurring in small amount in about an additional 12%. There is a striking decline in the number of moralizing selections, almost none being found. Informational matter is also much decreased in amount, excepting that one of the ten series has a good deal, especially biographies of American authors.

Of the last period, from 1905 to the present, for which eight series were examined in detail, the content has already been described in Chapter III. Practically all of it is "literary" in the sense which that term seems to have attained. That is, it is poetry or fictitious story, the latter preferably folk or classic in origin, and in only a negligible number of cases does it violate accepted canons by introducing any matter intended for serious belief in the lines of history, biography, geography, or natural science.

Primary readers of the present day are built, it appears, in accordance with their authors' interpretation of two generally accepted principles, — they must be interesting to children and they must be literature. These principles as it were coördinate and focus together like a pair of eyes upon two classes of material, poetry and story. That what is of interest to children of this age has never been demonstrated is claimed in a preceding chapter. That no justifiable criterion of literary merit has been set up in making these selections is asserted here. The folk lore of every known land, Japan, Russia, Germany, France, Ireland, England, China, and others is combed for new selections. The lack of agreement in reader contents indicates that these new comers in many cases displace old material of the same class, with no justification based on a comparison of literary merits. The language in which each story is told is not that of the literary artist who created it, but is the compiler's, conditioned, in many cases, by the small vocabulary of the pupils for whose reading it is designed.

Just wherein is this "literature"? What is literature? And if, as Reeder asserts, "all the leading series to-day are compiled on the basis of literature as the central subject and the controlling principle of selection," should there not be some body of selections, chosen because of their literary merit together with their suitability for the appreciation of primary pupils, which appear in every school and form the core and major portion of any series of readers that claims to be basal? Finally, is the practice of making literature the controlling principle of selection in a reading course justifiable?

These questions it is not my purpose to attempt to answer. But to some extent the question of interest is bound up with current ideas on them all, so far as the content of primary reading is concerned. Loose thinking follows some such line as the following: Literature is desirable. Interesting material is desirable. Therefore literature is interesting. Or this: Children like to read fairy tales. Fairy tales are not facts. Therefore children do not like to read facts. Careful thinking is concerned with the questions: What reading needs will come to children sooner or later? How may present reading interests contribute to meeting these needs? What reading interests is it desirable that children possess now or hereafter? How may these interests be developed from the interests they now have? Are all the desirable interests which now exist being nurtured and

developed, or are they being starved and displaced? Knowledge as to the actual interests of primary children is essential both to correct the loose and to aid the careful thinker.

For at least a hundred years in America textbook makers have endeavored to utilize children's interests in teaching them to read. But to-day, as a century ago, it is still true that their knowledge as to what is of interest is uncertain or only empirically derived. This condition will not continue to prevail. The increasing perfection of methods of psychological investigation, and especially the development of statistical means, will in time give us as exact scientific information on this and other matters of human nature and character as are now available in the field of the natural sciences.

CHAPTER V

THE METHOD OF THE PRESENT STUDY

The present study attempts to apply exact methods to the determination of the elements in primary reading material that arouse the interest of children in the first three grades, by means of reading to children in these grades pairs of selections from primary books, securing their written votes as to their preference, and analyzing the results with the aid of recognized statistical methods.

SELECTION OF MATERIAL

A preliminary selection was made of 243 samples of primary reading material including 73 samples of verse, 63 of factual prose, and 107 of fictional prose. These were chosen from nearly forty different books of primary grade for their presumably high interest quality.

These samplings were submitted to eight women judges, seven of whom are expert primary teachers and the eighth a specialist in abnormal psychology, and all of whom were college students, five graduate, three undergraduate. They were asked to classify each type of material, poetry, fiction, and fact, making ten groups of each, graduated from samples of the least to the greatest interest, in their opinion, for children of the first three grades.

On a basis of their composite judgments there were chosen for actual testing with children 31 samples which in general ranked high for expected interest and also represented a wide range of elemental qualities whose interest value it was desired to test. Where a specimen ranked low by the adult judges was included, it was because no better sample of its kind was available. Table III lists the thirty-one samples, gives the median value of each derived from the judges' rankings, and indicates the elemental qualities for which it was chosen.¹ It was recognized that so far as adults are able to judge of children's interests the factual material was inferior to both the poetry and fiction included, but no better samples of that type were available.

¹ For the benefit of any who may desire to examine the exact editions used, bibliography indicating the source of each sample appears at the end of this chapter.

TABLE III
 SAMPLES FINALLY CHOSEN FOR TEST AND QUALITIES FOR WHICH
 SAMPLES WERE CHOSEN

Sample No.	Title	Key Word	Median Value Adults' Judgments
1	How the Horses of the Sun Ran Away	Sun	5
2	Proserpina	Pros	4
3	Bessie Brandon's Guest	Bess	3
4	King Alfred and the Cakes	King	3
5	Candle Making at the Coolidges'	Candle	2.5
6	A Chinese School	School	4
7	Boys and Girls of Holland	Hol	4.5
8	The Pygmies	Pyg	4
9	East of the Sun and West of the Moon	East	1
10	Boots and His Brothers	Boots	3
11	One Eye, Two Eyes, and Three Eyes	One Eye	1.5
12	The Queen Bee	Bee	3
13	The Honest Woodcutter	Honest	3
14	The Lion and the Mouse	Lion	3
15	The Miller, His Son, and Their Donkey	Miller	3
16	A Story of Washington's Boyhood	Colt	3.5
17	Dumpy the Pony	Dumpy	2.5
18	Fiddle Diddle Dee	Fiddle	2.5
19	Daisies, <i>Sherman</i>	Daisies	1.5
20	The Swing, <i>Stevenson</i>	Swing	1
21	One, Two, Three, <i>Bunner</i>	1, 2, 3	2.5
22	The Water Dolly	Dolly	6
23	Epaminondas	Epam	1
24	The Husband Who Kept House	Man	2
25	The Three Wishes	Wish	2
26	The Three Billy Goats Gruff	Gruff	1
27	The Johnny Cake	Cake	1.5
28	The Wolf and the Seven Kids	Kids	1.5
29	The Old Woman and Her Pig	Pig	1
30	Mother Hubbard and Her Dog	Dog	1.5
31	The Jumbles, <i>Lear</i>	Jumb	3

QUALITIES FOR WHICH CHOSEN AND NUMBERS OF SAMPLES EMBODYING
 EACH QUALITY

Child Characters. Samples 1, 2, 3, 5, 6, 7, 10, 11, 16, 17, 18, 19, 20, 21, 22, 23.

Adult Characters. Samples 4, 8, 9, 12, 13, 15, 24, 25, 29, 30.

Boy the Central Figure. Samples 1, 10, 16, 17, 18, 23.

Girl the Central Figure. Samples 2, 3, 9, 11, 22.

Realistic (What could happen here to-day). Samples 15, 16, 20, 21, 22, 23, 24.

Historical (Occurrence dependent on past condition). Samples 3, 4, 5, 16.

Geographical (Occurrence limited to certain lands). Samples 6, 7, 8.

Fairy Stories (Folk tales with some supernatural agent). Samples 9, 10, 11, 12, 25, 26.

Myth (Stories derived from the old mythology). Samples 1, 2.

Folk Material (Only that with no supernatural agent classified under this head).
Samples 26, 27, 28, 29, 30.

Fables. Samples 13, 14, 15.

Fanciful (Modern material not realistic in character). Samples 17, 18, 19, 31.

These thirty-one samples were arranged in a numbered order according to certain qualities of likeness and difference existing between sequential specimens. It was designed that 1 and 2, 2 and 3, 3 and 4, and so on to 30 and 31 should be paired in reading to the children. In reading 1 and 2, *How the Horses of the Sun Ran Away* and *Proserpina*, a mythical story about a boy and a story of similar origin about a girl would be compared. When 2 was paired with 3, *Bessie Brandon's Guest*, a girl was the central character in each, but one story was mythical and the other assumed to be historical. Samples 23 and 24 were both humorous, but one told a funny story about a child and the other about a man and his wife. Numbers 24 and 25 were both funny stories about grown people, but one had a fairy element while the other was possible in a world of every day people. Sample 19, *Daisies*, Sample 20, *The Swing*, and Sample 21, *One, Two, Three*, were all verse, but the first was fanciful and meditative, the second realistic and meditative, the third realistic and narrative.

GIVING THE TESTS

In general, one-half hour was spent in each class room, during which two pairs of samples were read. In a few schools, all the samples were read, using half an hour a day for about two weeks. The reader began by giving the name of the story, and writing on the board some short significant part of the title to stand for it. The abbreviations thus used, which were constant for all the tests, are shown in Table III, under the heading Keyword. After reading one sample, the other member of its pair was similarly presented, i.e. its title was given, its keyword written on the board, and the selection was read. The pupils were then asked to write on a printed vote

slip, which is shown below, their names and the keyword for the sample which was their preference.

My name is .	...	...	...	...	...	...
I like .	...	...	...	...	...	...

The second pair of samples was similarly presented and voted upon, the keyword being written immediately after that of the first preference. In the case of first grade children, frequently only the first letter of the keyword was employed in voting, because of the inability of many 1A classes to write. In spite of this difficulty, however, their votes are believed to record their true preferences, since the accuracy of their written expression was again and again verified by passing rapidly around the class and having the children whisper the one they liked best.

The reader did not stop to comment upon or explain any point, and, as far as possible, comments or interruptions by pupils were stopped by a glance or a gesture. However, since it was felt desirable to keep the atmosphere of the class easy and natural, checking these irregularities was not carried so far as to repress interest and enthusiasm for the stories. Where they were unavoidable, a record of them was kept, and this record has been taken into consideration in using the data of the tests.

In addition to the 30 pairs originally planned, 10 others were made, numbers 1 and 5, 1 and 16, 3 and 9, 3 and 10, 10 and 13, 16 and 24, 21 and 31, 22 and 27, 23 and 27, and 23 and 29. Each of the forty pairs was read to and voted on by approximately twelve classes. Altogether 195 different classes were tested of which 175 were in New York City in 16 schools located in widely varying sections, and 20 were distributed among a Virginia city of about 25,000 inhabitants, a Virginia town of 3,000, an Arkansas town of 4,500, a Missouri town of 4,700, and a California city of 320,000. The Virginia, Arkansas, and Missouri classes, and the classes of one New York school were tested with all of the material, but the Los Angeles and the remaining New York classes in general voted on no

more than two pairs each. In all, 601 class-pair votes were obtained, the term *class-pair vote* being used to mean the vote of a single class on a single pair. About 17,000 individual votes were secured, the median number for any one pair being 412.

A very wide range of child types was included in the schools tested. There were Italians, Hebrews, negroes, and all the other elements in New York's melting pot; there were the children of college professors and of Second Avenue; the southern towns and city afforded a native American stock with but little foreign admixture; and the California city furnished a large proportion of Spanish nationality.

Early in the tests it became evident that a position error was present. The children strongly tended to vote for the second member of a pair. This was remedied by reading each pair as many times in reverse as in natural order. So strong was this tendency that in only six of the forty pairs was the average percentage of preferences greater for a sample when it was the first than when it was the second of the pair.

USE MADE OF RESULTS OF TESTS

The votes of each class were turned into percentages of preference. The class vote was thus made the unit rather than the individual vote, because of the fact that human beings in groups tend to yield some of their individuality and become merged into the social whole. The group is the true unit. These percentages were in turn transmuted into amounts of difference in terms of the P.E., according to the so-called "method of right and wrong cases." Table IV shows the positive or negative distances between the paired samples as derived from the percentages of preferences.

It became necessary here to make the assumption that the distance from 1 to 3 is the sum of the distances from 1 to 2 and from 2 to 3, and similarly that the distance between any two non-paired samples is the sum of all the distances between them. It has been noted that not only were sequential samples such as 1-2, 6-7, 13-14, paired in thirty cases, but non-sequential samples as 1-16, 3-10, 21-31, were paired in ten cases. Thus certain distances were derivable both from immediate comparisons and from a summation of several intervening pairs. The distance from 1 to 5, for example, was obtainable both from the paired comparison of 1 with 5, and

TABLE IV
DISTANCES BETWEEN TWO PAIRED SAMPLES
DERIVED FROM PERCENTAGES OF PREFERENCES

	Boys	Girls
From 1 to 2	— .6104	.4632
From 2 to 3	.7864	.3899
From 3 to 4	— .7924	— 2.2812
From 4 to 5	— .2632	.29
From 5 to 6	— .1384	.0032
From 6 to 7	— .0625	.33
From 7 to 8	.796	— .09
From 8 to 9	.548	1.3582
From 9 to 10	.114	— .5012
From 10 to 11	.0448	1.1550
From 11 to 12	— .22	— .715
From 12 to 13	.34	— .2776
From 13 to 14	— .8392	— .9845
From 14 to 15	.208	.256
From 15 to 16	1.4148	1.464
From 16 to 17	— .4808	— .0676
From 17 to 18	— .4676	— .1364
From 18 to 19	— 1.80	— 1.1508
From 19 to 20	— .19	— .392
From 20 to 21	1.1928	1.1946
From 21 to 22	— .0712	.8256
From 22 to 23	1.0335	.07
From 23 to 24	— .30	— .1208
From 24 to 25	— .7864	— .8428
From 25 to 26	.004	— .3568
From 26 to 27	.5932	.8404
From 27 to 28	.3917	.4152
From 28 to 29	— .6985	— 1.3875
From 29 to 30	.3869	.5624
From 30 to 31	— .6212	— .7872
From 1 to 5	— 1.3875	— .80
From 1 to 16	.3959	.5924
From 3 to 9	— .29	.0764
From 3 to 10	— .2536	— .7275
From 10 to 13	— .0732	— .205
From 16 to 24	— .8292	— .205
From 21 to 31	.6656	.0499
From 22 to 27	.4376	.0992
From 23 to 27	.07	— .1832
From 23 to 29	— .3368	— .81

from the sum of the distances derived from the paired comparisons of 1 and 2, 2 and 3, 3 and 4, and 4 and 5. Moreover, the distance of an intermediate sample might be measured from either of two extremes. Thus 7 might be measured from 9 by adding the distances 7 to 8 and 8 to 9, or from 5 by adding the distances 5 to 6 and 6 to 7. The distance values obtained in these several ways have been combined and averaged in order to decrease the amount of error. First the values of samples 1, 3, 5, 9, 10, 13, 16, and 24 were determined, after arbitrarily assigning to sample 1 the value 0, and then the values of the intermediate samples were found by their distances from these points. Table V shows the final values and ranks of the thirty-one samples as thus derived.

The reliability of these ranks has been determined by deriving similar ranks for the first half and the second half of the boys' and girls' percentages of preference respectively, and correlating² the ranks of the two halves. The r , first half with second half, is .72 for boys and .637 for girls. The reliability coefficient, therefore, by the formula³ $r_n = \frac{nr_1}{1 + (n-1)r_1}$, is .837 for boys and .778 for girls.

That is to say, the ranks derived from all the measures would probably correlate to this extent with ranks similarly derived from another set of an equal number of measures. This means that on the average each sample as ranked here is probably removed from the ranks that would be derived from another such set of measures 4.4 places in the case of girls' preferences and 3.8 places in the case of boys'.

The final task of the study is the determination of the elemental qualities or characteristics which account for the greater interest in one sample over another. To this end certain qualities were selected as those which it seemed probable would enter into the determination of interest. Certain of these qualities were indicated in the opinions of textbook makers cited in the opening section. Such for example are liveliness (or action), plot, and fancifulness. Others, suggested by the conclusions of Votrovsky, Barnes, and Wissler,

² The correlating formula used here and throughout the study is the so-called Spearman foot-rule, $R = \frac{3\sum D}{n^2 - 1}$.

³ See Brown, *Mental Measurements*, pp. 101-102.

TABLE V

FINAL VALUES AND RANKS OF SAMPLES

Derived by a Combination of Results from Reading Sequentially Numbered Samples as a Pair with Those Obtained from Reading Non-sequentially Numbered

Sample		Value		Rank	
No.	Key Word	Boys	Girls	Boys	Girls
1	Sun	0	0	7	18.5
2	Pros	— .6	.5	17.5	12
3	Bess	.2	.9	2.5	4
4	King	— .7	— 1.3	20.5	31
5	Candles	— 1.1	— 1.0	25.5	29
6	School	— 1.3	— .9	28	27.5
7	Hol	— 1.4	— .6	29	23.5
8	Pyg	— .6	— .6	17.5	23.5
9	East	— .1	.8	9.5	6
10	Boots	.0	.1	7	15.5
11	One Eye	.0	1.2	7	1.5
12	Bee	— .2	.4	11.5	13.5
13	Honest	.1	.1	4.5	15.5
14	Lion	— .8	— .9	22	27.5
15	Miller	— .7	— .7	20.5	25.5
16	Colt	.6	.7	1	8.5
17	Dumpy	.2	.6	2.5	10.5
18	Fiddle	— .3	.4	13	13.5
19	Daisies	— 2.0	— .7	30	25.5
20	Swing	— 2.2	— 1.2	31	30
21	1, 2, 3	— .9	— .0	23	18.5
22	Dolly	— 1.0	.8	24	6
23	Epam	— .2	1.0	11.5	3
24	Man	— .5	.8	15	6
25	Wish	— 1.2	.0	27	18.5
26	Gruff	— 1.1	— .2	25.5	22
27	Cake	— .4	.7	14	8.5
28	Kids	.1	1.2	4.5	1.5
29	Pig	— .6	— .0	17.5	18.5
30	Dog	— .1	.6	9.5	10.5
31	Jumb	— .6	— .1	17.5	21

were being about animals, being about children, being about girls, being poetry, being humorous. Two qualities that make up poetry were distinguished, i.e., poeticalness of thought and verse form. The opposites of certain of the qualities were added to the list and a

few others were included, so as to bring up to twenty the total number of qualities whose effects on interest were to be sought. For convenience in reference to these qualities it has been necessary to coin abstract nouns which are given in the complete list which follows: adultness, animalness, boyness, childness, conversation, familiar experience, fancifulness, girlness, humor, imagery, moralness, narrativeness, plot, poeticalness, realism, repetition, style, surprise, verse form, and liveliness.

The thirty-one samples were then submitted to adult judges, graduate or undergraduate students, or holders of advanced degrees, who were instructed to rank them on a scale of 1 to 7 for each quality in turn according to the degree to which, in their opinion, the samples were possessed of these qualities.

The number of returns received from these judges are shown in Table VI.

TABLE VI
NUMBER AND SEX OF JUDGES WHO RANKED SAMPLES FOR VARIOUS QUALITIES

Quality for Which Samples were Ranked	Men Judges	Women Judges	Total No. Judges
Girlness	2	9	11
Boyness	2	9	11
Animalness	2	9	11
Moralness	2	9	11
Verse Form	0	9	9
Poeticalness	1	9	10
Style	0	8	8
Liveliness	2	9	11
Narrativeness	0	9	9
Humor	2	9	11
Childness	2	9	11
Adultness	2	9	11
Repetition	1	9	10
Imagery	1	9	10
Realism	2	9	11
Fancifulness	2	9	11
Plot	0	9	9
Familiar Experience	2	9	11
Surprise	0	8	8
Conversation ⁴	1	3	4

⁴ Amount of conversation was eventually determined by count of lines. The ranks thus determined correlated with those given by the four judges with an r of .868.

The rank finally given each sample was computed by obtaining the sum of all the ranks given it by the various judges, and determining the relative position of this sum in comparison with similarly obtained sums for each of the other samples.

In general the reliabilities of these ranks are high. These reliabilities were determined in each case by correlating the ranks derived from the judgments of two or three judges with those of another two or three, and substituting this r in the formula
$$\frac{nr}{1 + (n - 1)r}$$

The following were the correlations obtained.

r , Boyness	3 women correlated with 3 women	.809
r , Boyness	3 women correlated with 2 men	.897
r , Verse Form	3 women correlated with 3 women	.992
r , Poeticalness	3 women correlated with 3 women	.825
r , Style	3 women correlated with 3 women	.642
r , Style	3 women correlated with second 3 women	.710
r , Moralness	3 women correlated with 3 women	.807
r , Moralness	3 women correlated with 2 men	.752
r , Moralness	3 women correlated with second 3 women	.885
r , Moralness	2 men correlated with second 3 women	.833
r , Humor	3 women correlated with 3 women	.91
r , Humor	3 women correlated with 2 men	.763
r , Surprise	2 women correlated with 2 women	.535
r , Narrativeness	3 women correlated with 3 women	.518
r , Narrativeness	3 women correlated with second 3 women	.82
r , Plot	3 women correlated with 3 women	.839
r , Plot	3 women correlated with second 3 women	.882
r , Animalness	3 women correlated with 3 women	.972
r , Animalness	3 women correlated with 2 men	.954
r , Liveliness	3 women correlated with 3 women	.877
r , Liveliness	3 women correlated with 2 men	.823
r , Girlness	3 women correlated with 3 women	.82
r , Childness	3 women correlated with 3 women	.782
r , Repetition	3 women correlated with 3 women	.842
r , Imagery	3 women correlated with 3 women	.485
r , Fancifulness	3 women correlated with 3 women	.892
r , Familiar Experience	3 women correlated with 3 women	.514

The lowest of these correlations, for *imagery*, *narrativeness*, *surprise*, and *familiar experience*, give a reliability coefficient of .768 for the total rank obtained from 10 judgments of *imagery*, of .821 for that obtained from 8 judgments of *surprise*, of .763 for that obtained from 9 judgments of *narrativeness*, and of .795 for that obtained from 11 judgments of *familiar experience*.

The ranks of the thirty-one samples for each quality were next correlated with their ranks respectively for interest to boys and interest to girls, in order to determine the importance of each quality in determining such interest. It early became evident, however, that the true facts were obscured by the influence in each interest ranking of a combination of factors some of which acted together, some in opposition. Thus *plot*, *liveliness*, and *narrativeness*, all showed high correlation with boys' interests, r , *plot*, .615, r , *liveliness*, .514, r , *narrativeness*, .572. It appeared possible that all three of these were due to some common factor. The interest of a narrative might be attributable to its possession of a *plot*, the interest of a narrative either with or without a *plot* might be due to *liveliness*.

To eliminate such complicating factors recourse was had to the method of partial correlation. No effort is made here to present the theory upon which the method is based. For this the reader is referred to Chapter XII of Yule's *Theory of Statistics*. Nor has the long and burdensome labor required in the solution of Yule's regression equations been undertaken. The method of partial correlation has been enormously simplified and rendered widely usable by Kelley's tables, and it is with the assistance of these tables that all the partial correlations in this study have been computed.

This method has been used to free each of the crude correlations which was large enough to appear significant from the probable distortion due to an irrelevant correspondence with any other one of these significant elements. In general, only partial correlations of the first order have been determined, that is to say, though the results from eliminating any one of the several complicating factors have been computed, in most cases the correlation has not been freed of the sum of the effects of two or more variables which may seriously affect the coefficient. Where the crude correlatoin or partial correlations of the first order showed a quality to have but small effect on interest, it has not seemed worth while to pursue the analysis farther. This, however, has been done in the case of the elements whose crude correlations indicated high efficacy as producers of interest, and which still appeared significant after the partial correlations of the first order had been computed as described above.

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CHAPTER VI

GENERAL TENDENCIES OF CHILDREN'S INTERESTS

A. PRIMA FACIE INDICATIONS

Most notable, perhaps, of the *prima facie* indications of the tests is the narrow range within which all the samples lie. The total distance, from the most to the least interesting, is only 2.8 P. E. for boys and 2.5 P. E. for girls. In fact, excepting for three extreme samples, one at the head and two at the foot of the list, all the boys' preferences are encompassed within 1.7 P. E. That is to say, if the specimens that by this consensus of children's judgments are most and least interesting were paired and read to a very large number of children selected at random, about 5% of the girls and 3% of the boys would prefer the sample which here stands at the foot of the list, and if the second from the highest and third from the lowest in the boys' lists were compared, 12% of the boys would rank the latter above the former. All the specimens used in this test are of high interest value. If all the reading matter that might conceivably be prepared to fit the capacity of primary children were ranked in order from the least endurable and most boring to the most enthralling, these samples would probably all fall in the upper quartile. This fact must be remembered in interpreting all the conclusions of the study. It is a large cause of what unreliability they possess, since preference judgments vary widely where differences are slight. It should to a certain extent protect the reader against extreme ideas especially as to the poor interest values of the samples which rank lowest of those tested.

A second fact that casual inspection reveals is the inferior position of the verse samples. This is especially notable in view of the large proportion, 51% of the titles, which poetry assumes in primary reading books. One of the five samples of verse included in these 31 samples, *Mother Hubbard and Her Dog*, just comes within the upper third of the ranks for boys and just fails to attain the upper third for girls. The one sample of Stevenson's verse, *The Swing*, falls in the 31st place in the boys' column and the 30th in the girls', and another sample of verse ranks 30 for boys and 25.5 for girls. More-

over, these two verse samples at the foot of the boys' list are .5 P. E. below any other sample. The distribution is shown below.

Some indication is afforded as to the interest possibilities of factual material. It is a story of a historical character, *George Washington and the Colt*, which holds first place in boys' liking, and another such story, *Bessie Brandon's Guest*, falls in the upper five ranks for both boys and girls. It is a historical story, however, which has the lowest place in girls' ranks, and the four history stories all rank somewhat higher in boys' preferences than in girls'. All told, the four history samples were compared in reading to

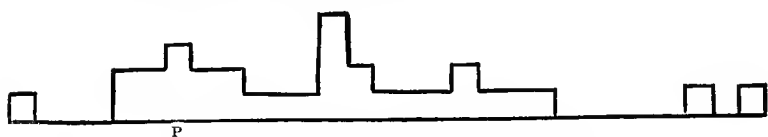


FIG. 1. DISTRIBUTION OF SAMPLES, BOYS

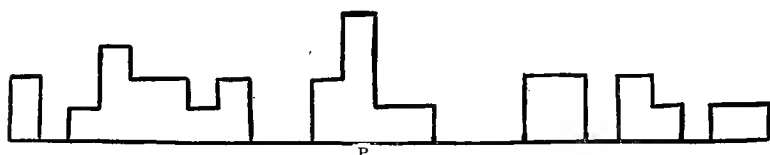


FIG. 2. DISTRIBUTION OF SAMPLES, GIRLS

children with 17 different fiction samples, among which were myth, fairy story, folk tale, fable, humor, and a realistic story of everyday life. One hundred thirty-three groups of boys and one hundred nine groups of girls expressed preferences on history-fiction pairs thus made up. The percentages derived from all their votes was averaged and the result showed a slight preference for these history samples over these fiction samples on the part of both boys and girls, 59.25% of boys' votes and 53.75% of girls' votes going to the former. There was, however, wide variation among the different history samples. The best liked had a total preference over the twelve fictional samples with which it was compared in 57 groups of boys and 50 groups of girls, of 74.6% for the boys and 70.05% for the girls. The least liked practically reversed these figures. Compared with 12 different fiction samples, in 24 groups of boys and 23 of girls, the votes against it were 77.85% for the former and 69.05% for the latter. Indications from the data at hand are that it is not

the class, whether history or fiction, to which a reading selection belongs that gives it interest, but that it is some more elemental quality or qualities, which may at times characterize selections of one class, at times those of another. The same is probably true of geographic material, but the test returns have little direct evidence on this point. That all three of the selections from this class ranked low for both boys and girls may be because they were geography, but at least as probably may be because they were deficient in elements of interest entirely possible to well selected, well written geographic material. The desirability of further analysis of the interest elements in factual material is indicated.

Sex differences appear more or less certainly in several instances. *The Water Dolly* holds sixth place in girls' interest and falls to twenty-fourth in boys. It is perhaps noteworthy that for the latter it is as high as twenty-fourth. Boys prefer the story of the boy Phaeton, who drove the sun god's chariot, to that of the girl Proserpina, who was whirled away in the chariot of the god of the underworld; for girls the order of preference is reversed. Such negative correlation between boys' and girls' preferences exists in eleven of the forty pairs of samples, but in most of these cases the percentage is so little above or below 50% that the differences may be due to chance errors.

B. ELEMENTS OR FACTORS OF INTEREST

By recourse to correlation, conclusions are obtained which are freed from much of the uncertainty and opposition of evidence described above, for by this means it is possible to analyze out the effect of the degree of one element's absence or presence. Table VII, presenting the crude correlations obtained by the Spearman foot-rule, at once throws certain elements into prominence and raises definite questions with respect to others.

Seven elemental qualities show with boys' interests a correlation above .40; five show such a correlation with girls' interest. The seven include all the five, *surprise*, *plot*, *narrativeness*, *liveliness*, and *conversation*, and add to them *animalness* and *moralness*, which also correlate positively though not so highly with girls' interest, their *r*'s being respectively .258 and .342.

In addition to the seven elements already named, seven others, *fancifulness*, *repetition*, *poeticalness*, *boyiness*, *verse form*, *childness*,

TABLE VII

CORRELATION OF INTEREST AND TWENTY INTEREST FACTORS

Correlations for Boys		Correlations for Girls	
Surprise	.639	Surprise	.612
Plot	.615	Conversation	.556
Narrativeness	.572	Plot	.553
Animalness	.548	Narrativeness	.539
Liveliness	.514	Liveliness	.454
Moralness	.441	Fancifulness	.399
Conversation	.427	Repetition	.374
Fancifulness	.379	Moralness	.342
Repetition	.267	Imagery	.263
Poeticalness	.255	Animalness	.258
Boyness	.166	Childness	.258
Verse Form	.113	Poeticalness	.151
Childness	.058	Familiar Experience	.143
Humor	.034	Girlness	.127
Adulthood	-.044	Humor	.113
Imagery	-.069	Verse Form	.104
Familiar Experience	-.113	Boyness	-.110
Style	-.151	Style	-.159
Girlness	-.212	Adulthood	-.224
Realism	-.383	Realism	-.281

and *humor*, correlate positively with boys' interest, and nine others, *fancifulness*, *repetition*, *imagery*, *childness*, *poeticalness*, *familiar experience*, *girlness*, *humor*, and *verse form*, with girls'. If for both the term *boyness* in the boys' column and the term *girlness* in the girls' column we substitute the expression *same-sexness*, these nine include all these seven. The remaining elements, six for boys and four for girls, correlate negatively with interest. Here again, substituting the expression *other sexness* for *boyness* in the girls' column and for *girlness* in the boys' column, the six, *adulthood*, *imagery*, *familiar experience*, *style*, *girlness*, *realism*, are found to include the four, *boyness*, *style*, *adulthood*, *realism*.

In general, then, qualities in these reading selections which attract boys appear to affect girls similarly and qualities which repel boys to repel girls. The correlation between the ranks of these twenty

qualities as interest producers for boys and for girls respectively is in fact .69.

For primary children in general, and within the range of the 31 reading samples which have been tested, the elements of *surprise*, *plot*, *narrativeness*, *animalness*, *liveliness*, *moralness*, and *conversation* seem to be most efficient as interest producers, with *fancifulness* and *repetition* as close seconds. There appears a slight favorable reaction toward stories of one's own sex and against stories of the other sex. Poetry shows little attraction, and of its two possible characteristics, *poeticalness* stands higher than *verse form*, which is almost negligible. *Imagery* is of little interest value, if not absolutely detracting from interest. *Humor*, at least what adults call humor, apparently contributes little or nothing to children's likes. This is probably not true of humor of the slap-stick or comical mishap variety, but the small amount of this in the samples tested is insufficient as a basis for a more positive statement. *Rhetorical style* detracts slightly from interest, as does the fact that a story centers about an *adult* rather than a *child* character. *Familiar experiences* appear lacking in interest, if not actually repellent, and *realism*, the absence of any element of fancy, seems most undesirable.

In only a few respects are notable sex differences shown. Chief of these are the high place which *animalness* holds in boys' interest, and the equal superiority which *conversation* manifests in girls'. It may be recalled that it was an Alice who raised the question, "And what is the use of a book without pictures or conversations?" Less conspicuous, yet sufficient to deserve attention, is the indicated greater preference of girls over boys for stories about children. For boys it appears almost indifferent whether the human characters of a story are *child* or *adult*; girls like a *child* character just as well as an *animal* character and decidedly more than an *adult* character. There is some indication, also, that *familiar experiences*, though not especially interesting to girls, are yet more welcome to them than to boys. Several of these differences, however, are so slight that they may be altogether accounted for by chance inaccuracies in the original measures. They are chiefly of value to suggest questions for further inquiry and experimentation rather than to afford the basis for present conclusions.

Certain questions have probably already arisen in the reader's mind as to the justifiability of some of the conclusions towards

which the above summary does seem to point. Can it be true that children are as fond of distinctively moral stories as the correlations of .441 with boys' interest and .342 with girls' interest indicate? If so, what justification is there, at least on the basis of interest, for the criticisms that have fallen upon the moral subject matter which largely made up the old readers? Do children actually dislike reading selections which lie in the field of their familiar experiences? Is it possible that poetry has so slight an attraction for little children? And do they not enjoy humorous selections?

It is familiar to students of mental and social facts that a wide difference often occurs between obtained and true correlations, because of the effect of some irrelevant variant or variants to which both the series to be compared in some degree correspond. "It is obvious that, in order to measure the essential correlation between fact A and fact B, we should have a series of pairs of amounts related only through the relationship of A to B. But unless great care is taken in the selection of the data, other factors affecting the relationship of the amounts are sure to enter. Thus, . . . the influence of heredity can not be inferred from fraternal correlation until a discount is made for the factor, similar training."¹ Such discount has necessarily to be made not only for one, but for many complicating factors in determining the true interest value of any one quality of a reading selection, since each selection is sure to involve many qualities. A story of a boy may also, and equally, be a story of a dog, a narrative, with a plot of greater or less merit, lively, abounding in conversation, and withal pointing an approved moral. The true weight of any one of these characteristics as interest producers can only be determined by eliminating the influence exerted on the correlation measure by all the others. This fact has necessitated the use of the method of partial correlation, as has already been stated in the description of the general method of this study.

Tables VIII and IX present the results of partial correlations of the first order, eliminating in turn each one of the nine most significant factors from each of its fellows. An examination of the figures shows that thus throwing out only one irrelevant factor reduces to practical negligibility the significance of nearly half of these elements.

Moralness without the effect of *plot* now shows an r of .0336 for

¹ Thorndike. *Mental and Social Measurements*, pp. 180, 181.

TABLE VIII
CRUDE CORRELATIONS AND RESULTS OF PARTIAL
CORRELATIONS OF FIRST ORDER, MOST SIGNIFICANT QUALITIES

GIRLS

<i>r</i>	Animalness	Conversation	Fancifulness	Liveliness	Moralness	Narrativeness	Plot	Repetition	Surprise
Crude Correlation	.258	.556	.399	.454	.342	.539	.553	.374	.612
Animalness eliminated	....	.5158	.3486	.3857	.3065	.4955	.5235	.3195	.5951
Conversation "	.0937	....	.2675	.1204	.1817	.2892	.3645	.1715	.4963
Fancifulness "	.1579	.4872	....	.3200	.3865	.4226	.4471	.1976	.5358
Liveliness "	.0198	.3816	.2250	....	.3780	.3767	.4725	.1554	.4711
Moralness "	.2061	.4943	.4354	.4790	....	.4510	.4666	.4483	.6005
Narrativeness "	.0874	.3302	.1644	.1930	.0851	....	.1944	.3882	.4865
Plot "	.1553	.3735	.1780	.3341	-.0523	.1386	....	.4745	.4931
Repetition "	.1622	.4715	.2491	.3161	.4236	.5467	.6115	....	.5415
Surprise "	.1901	.4107	.2061	.0956	.3126	.3671	.3998	.1639	....

TABLE IX
CRUDE CORRELATIONS AND RESULTS OF PARTIAL
CORRELATIONS OF FIRST ORDER, MOST SIGNIFICANT QUALITIES

BOYS

<i>r</i>	Animalness	Conversation	Fancifulness	Liveliness	Moralness	Narrativeness	Plot	Repetition	Surprise
Crude Correlation	.548	.427	.379	.514	.441	.572	.615	.267	.639
Animalness eliminated	....	.3112	.2685	.3089	.4045	.4849	.5955	.1215	.6572
Conversation "	.4763	....	.2743	.3350	.3397	.4293	.5055	.0958	.5592
Fancifulness "	.4917	.3426	....	.4043	.4895	.4741	.5317	.0707	.5725
Liveliness "	.3764	.1273	.1663	....	.5070	.3864	.5417	-.0412	.4705
Moralness "	.5231	.3207	.4369	.5677	....	.4476	.4798	.3640	.6414
Narrativeness "	.4527	.1063	.1178	.2615	.2061	....	.2902	.2636	.5167
Plot "	.5241	.1479	.1099	.4044	.0336	.0935	....	.3723	.5195
Repetition "	.5070	.3566	.2858	.4557	.4985	.5713	.6502	....	.6017
Surprise "	.5726	.2186	.1664	.1681	.4462	.4071	.4830	.0064	....

boys and — .0523 for girls, that is to say, it is a matter of indifference whether a story does or does not convey moral teaching. At least for the range of the samples of this study, selections with a moral implicit or expressed are interesting to children, it is true; not, however, on account of the moral element, but because so good a plot has been employed in setting forth this moral. The household tales have persevered through generations, not because of their presentations of virtue triumphant and evil properly punished, but because they are good stories.

Indications are that an interest in *animals* is a certainty in the case of boys, but that where girls are concerned, all the apparent animal interest may be explained by either *conversation* or *liveliness* or *narrativeness* as a coexistent factor. For when these elements are respectively eliminated, the correlations fall to .0937, .0198, and .0874. *Repetition* and *narrativeness*, so far as boys' interest is concerned, lose all their weight, being reduced to approximately zero, the former by the elimination of the influence of either *fancifulness*, *liveliness*, or *surprise*, the latter by the elimination of the *plot* element.

Only two factors, *plot* and *surprise*, maintain an interest coefficient for both boys and girls as high as .15, no matter which one of the other nine items is eliminated, *plot* falling to .1944 for girls and .2902 for boys when the weight of *narrativeness* is removed, and *surprise* persisting throughout with a very high ratio, no less than .47 for either sex in any case. For girls *fancifulness* and *repetition* are not reduced below .15, and for boys *liveliness* maintains as high a correlation. It may be noted that the reduction of the correlation for *fancifulness* implies a raising of *realism* in interest value.

So far as the facts go which are obtainable from partial correlations of the first order, decidedly the most important factors in producing interest for children of primary grades are a good *plot* and the element of *surprise*. In addition, boys are especially interested by accounts of *animals*. *Moral* teaching in a story apparently neither makes nor mars interest. All the rest of the nine elements which showed high correlations with interest for both boys and girls seem to be minor influences, with slight positive value.

In only a few cases in this study has partial correlation been employed in the case of those qualities whose original crude cor-

relations were already very low. Notable among the results in these few cases were the effects of freeing *girlness* for girls, *boyiness* for boys, and *childness*, *realism*, *humor*, *verse form*, and *poeticalness* for both from the irrelevant presence of the *liveliness* variable, and of eliminating the factor of *plot* from the crude correlations between *familiar experience* and the interest of boys and girls.

The correlation for *humor* was strikingly lowered, from .034 to $-.3334$ and from .113 to $-.1730$, in the case of boys and girls respectively. *Humor*, or what adults term humor, appears on the basis of this even less contributory to interest than the crude correlation indicated; in fact, it is now shown as actually detracting from children's liking. *Versé form* was lowered in interest value from .113 to .001 (boys) and from .104 to .0058 (girls), and *poeticalness* from .255 to .1186, and from .151 to .0136 respectively; in other words both these elements were shown as practically indifferent, neither making nor marring interest.

For all the other apparently minor interests freed from the complicating presence of *liveliness* as a factor, the contrary effect was produced. The correlations of *girlness* with girls' interests, *boyiness* with boys' interests, and *childness* with both, all were raised, *girlness* from .127 to .2367, *boyiness* from .166 to .2347, and *childness* from .058 to .2161 in the case of boys and from .258 to .4223 in the case of girls. Even more striking is the partial correlation of *familiar experience* with interest, *plot* having been eliminated. Whereas the r for boys was decidedly negative, $-.214$, it now becomes very slightly positive, .0306, while for girls the low positive r , .143, rises to significant proportions, .324. These are all samples of factors whose interest value is masked by the concomitance of certain elements of negative effect. *Familiar experience*, no worse than indifferent for boys, and a decided cause of interest for girls, is so bound up in the samples of this test with deficiencies of *plot* that it appears to repel, when in reality it falls low because selections with high *plot* value are given the upper place.

The foregoing answers some questions raised by an inspection of the crude correlations, and illustrates the means which is available for further analysis of other doubtful results of similar cause. By this means the evidence that children are much attracted by *moral* stories is refuted, as is the appearance of dislike for reading material dealing with the field of *familiar experiences*. *Poetry*, however, is

credited with rather less attractiveness than was originally indicated, and what is *humor* to the adult is actually negative in effect.

It should be noted that the results as described above are by no means freed from all irrelevants. The single effects of various complicating factors have been eliminated, not the sum total of all their effects. It is theoretically possible to carry forward an analysis, by the derivation of partial coefficients to the second, third, fourth, or *n*th degree, so that each one of these interest elements would be freed of all irrelevants. It is likewise theoretically possible to consider other elements not mentioned at all in this study, and to carry these, too, to a true expression of their interest values. Practically, the laboriousness of deriving partial correlations eliminating all irrelevant factors has necessitated limitation of the application of this process to only the most significant factors, or to those cases where it seemed probable that the true positive value was masked by the presence of negative elements. Partial correlations of the fifth order were thus computed for *animalness*, *childness*, *conversation*, *familiar experience*, *fancifulness*, *humor*, *liveliness*, *moralness*, *narrativeness*, *plot*, *repetition*, *surprise*, and *verse form*, the results being shown in Table X.

For the benefit of those who are unfamiliar with the expressions of partial correlation, it may be stated that the two letters before the point indicate the quantities whose correlation is sought; the letters after the point those quantities from whose distorting effect the crude correlation has been freed. Thus $r_{IA.PLFSM}$ means the correlation of interest with *animalness* after eliminating the share of *plot*, *liveliness*, *fancifulness*, *surprise*, and *moralness* in producing the original crude correlation between interest and *animalness*. The effect of partial correlation appears very strikingly in such a case as $r_{IL.PRSACH}$. The crude correlation of interest with *liveliness* was +.514 for boys and +.454 for girls. But the correlation of interest with *liveliness*, after eliminating the contribution of *plot*, *repetition*, *surprise*, *animalness*, and *childness*, to the degree that each of these qualities occurred along with *liveliness* in the samples, is —.21 for boys and —.00 for girls. All the interest value superficially attributed to *liveliness* appears to have been due to the other qualities which the samples possessed. In fact, the interest value of those other qualities was so strong as to mask a probable negative effect of *liveliness* on the interest of boys.

TABLE X

EXTENDED PARTIAL CORRELATIONS FOR MOST SIGNIFICANT FACTORS

<i>r</i>	Boys	Girls	<i>r</i>	Boys	Girls
IA.PLFSM	+.57	+.09	IH.PRSACH	-.35	+.10
IA.PLSMR	+.57	+.09	IH.PRSACo	-.41	-.28
IA.ChPSLCo	+.57	+.12	IL.PRSACH	-.21	-.00
IA.CoPSLCh	+.57	+.12	IL.PRSACo	-.24	-.07
ICh.CoPSLA	+.21	+.41	IL.PRSaF	-.27	-.14
ICh.PRSACo	+.27	+.46	IM.ALFSP	+.03	+.09
ICh.PRSAH	+.02	+.43	IM.PLRSA	+.06	+.02
ICh.PRSAL	+.19	+.44	IN.PRSAH	-.05	+.08
ICo.ChPSLA	-.05	+.26	IP.ALFMS	+.30	+.15
ICo.PRSACH	-.16	+.18	IP.ALRMS	+.32	+.34
ICo.PRSaFam	-.15	+.17	IP.MSChCoR	+.32	+.32
ICo.PRSAH	+.03	+.27	IR.PLSMA	+.08	+.32
ICo.PRSAL	-.01	+.29	IR.MSChCoP	+.18	+.20
ICo.PRSaV	-.14	+.17	IS.ALFMP	+.58	+.39
IFam.PRSACo	+.11	+.44	IS.ALRMP	+.56	+.36
IF.PLSMA	-.07	+.09	IV.PRSACo	-.01	-.02
IF.PRSAL	-.19	-.18			
IH.PRSAN	-.39	-.20			

A, animalness; Ch, childness; Co, conversation; F, fancifulness; Fam, familiar experience; H, humor; L, liveliness; M, moralness; N, narrativeness; P, plot; R, repetition; S, surprise; V, verse form.

This table in general confirms some indications of the crude correlations and reverses others. *Surprise* and *plot* persist as important causes of interest for both sexes, as do *animalness* for boys, and *childness* for girls, with some change in the amount of influence in each case. *Conversation* is reduced to slight positive value for girls and becomes actually negative in the case of boys. *Repetition* remains positive, but of low value, especially for boys. *Moralness*, apparently of importance in producing interest, proves to be a matter of indifference for both sexes. The same is true of *narrativeness*. *Fancifulness*, also of decided interest value according to the

crude correlations, shows itself at best indifferent, and perhaps actually antagonistic to interest. Even more marked is the reversal of the original showing as to *liveliness*, which, from a position as one of the five most important factors for both sexes is reduced to unquestionably negative influence for boys and negative or neutral effect for girls. *Familiar experience*, on the other hand, at first apparently negative for boys and low in positive value for girls, now shows itself at least positive for boys, and for girls ranking as high as *childness*, the two being most potent of all the elements here analyzed in producing girls' interest. *Verse form* is even more surely indifferent than the original *r*'s indicate, and *humor* is reduced from mere indifference to strong negative influence for boys, and to probable negativeness for girls.

Characteristics which may be expected to cause interest in primary children are, it appears, *surprise* and *plot* for both sexes, *animalness* for boys, and *childness*, *familiar experience*, and to a lesser degree *repetition* and *conversation* for girls. It is significant that the interest value of *surprise* outranks that of *plot*, since thereby a large amount of factual material, lacking the story element, but abounding in elements of wonder and unexpectedness, is of promise as affording interesting reading matter for primary children. That *childness* only slightly adds to interest for boys means, conversely, that selections dealing with adult characters will probably appeal to them as much as incidents dealing with children. This may be a root of the slight superiority of boys to girls in history indicated by the few comparative studies of high school pupil's abilities. The rank of *King Alfred and the Cakes* in this study is, it may be recalled, 31 for girls and 20.5 for boys. Similarly, preferences noted for boys over girls for stories of adventure may be due to the fact that whereas girls are decidedly attracted by accounts dealing with their own *familiar experience*, this element is for boys a matter of practical indifference.

For several of the elements here evaluated, the statistical findings are quite at variance with generally accepted ideas. The unfavorable effect of *liveliness*, particularly for boys, is one of the most surprising facts revealed by the process of partial correlation here applied. Far from adding to interest, as the crude correlations and common opinion would indicate, it detracts. It is probable that if a story moves at too rapid a rate, the imagination of the little child cannot keep pace with it, and, missing one salient point

after another, soon finds itself groping in a maze of jumbled ideas, a situation which is sure to prove annoying. This point will be again referred to in a further discussion of *familiar experience* in a later chapter. That *fancifulness* adds nothing, but perhaps derogates from interest, is also not in accord with the popular idea. Much emphasis is laid in pedagogical writings upon the value of fairy tales for their imaginative values, their appeal to the fancy, their freedom from the carping confines of realism. The indication of this study is that it is not the fancifulness of the fairy lore that causes its appeal, but other interest factors which it possesses, such as *surprise*, *plot*, *childness*, *animalness*, or *familiar experience*; and that true or realistic selections, equally possessed of these desirable characters, would be equally interesting.

There is also here no warrant for the common belief that *verse form* is attractive to children. A generous interpretation of the statistical results can no more than make it indifferent in value. If *verse form* counts neither for nor against interest, children's enjoyment of of poetry will depend upon its other qualities. If the verse of the early readers is selected for its richness in true factors of interest it will be enjoyed and a developing taste for poetry may be expected. If, on the contrary, the tastes of childhood are ignored or violated, either the habit of neglecting or actual distaste for this form of literature will be the outcome. In other words, if a taste for, an interest in, an enjoyment of poetry is desired, it must be built up by intelligent application of the psychological law of effect. Otherwise, the same law will of a surety bring about the opposite result. Poems which tell a story, for example, rather than those of the more meditative or descriptive type, would seem to be indicated. It is interesting in this connection to recall the two samples of verse which, in Wissler's study, were found to be popular in second and third readers:

Two little kittens, one stormy night
Began to quarrel and then to fight,

and

Now such a story I never heard
There was a little shivering bird.

Each is seen to possess to a considerable degree the elements of *plot*, *animalness*, and *familiar experience*; and the *childness* and *surprise* elements are additional characteristics of the second.

It is recognized that the limited proportion of poetic selections in the samples of this study is not adequate for final conclusions along these lines. There may be questions, also, as to the effect of poetry upon different ages or stages of the primary and pre-primary period. The question of interest values in verse may well be made the subject of a special investigation to settle doubts or answer questions raised by the findings of this study.

Generalizations as to *humor* are particularly difficult, since humor as the child sees it and humor to the adult mind are not one and the same. Children laugh at funny mishaps, but are often baffled by the hidden meanings or by the subtle turns of expression and thought that make humor for the adult. A case in point is the story of *Epaminondas and His Auntie*, one of the thirty-one samples used in the test. Said a teacher, "I never liked the ending of that story. I don't believe any of the children see the point, when the mother says, 'You be careful how you step on those pies,' and the story goes on to say, 'And Epaminondas was careful. He stepped right in the middle of each pie.'" A small girl, four years old, being told this story, laughed loudly throughout it. Two weeks later, on the story-teller's next visit, she begged for it again. The same thing occurred at intervals of two weeks for about three months. Each time she laughed, but the laughter was less genuine, more forced. Finally she burst forth, "I don't see a grain of sense in that story. Every time he did what his mother told him to, and every time she scolded him for it." She had missed the point of the story; her laughter had been for the butter running into the boy's face and down his neck, the loaf of bread trailing in the dust, the puppy dog cooled and cooled in the spring. This story was almost unanimously ranked first for humor by adult judges, 10 out of 11 giving it first place, the 11th giving it second among the 31 samples of the test. It ranks as number 3 for girls and number 11.5 for boys in the interest scale. There are two other selections in the 31 samples which deal with comical situations or mishaps, *The Husband Who Kept House* and *The Three Wishes*. These were ranked by adults in second and third places respectively for humor. They appear as ranks 6 and 18.5 in the girls' interest scale, and ranks 15 and 27 in the boys'. The rank of any humorous selection, however, is a compounded result of all its factors. *Humor*, itself, analyzed out from all accompanying elements, makes for

dislike and distaste, at least so far as the samples of this study are concerned. As in the case of verse, the number and variety of humorous samples here afforded perhaps do not warrant a dogmatic conclusion. In humor, also, further and more specific investigations seem necessary. The indications of this study will at least serve to point out questionable issues, and to protect against the unwarranted assumption that there is large interest value for children in either humor or verse in general.

The reduction of the interest value of both *moralness* and *narrativeness* to zero is noteworthy. Both of them have owed their apparent importance to coexistent elements of real value. To point out only one of these elements, the crude correlation of *moralness* and *plot* is $+.679$, of *narrativeness* and *plot* is $+.875$. It appears that there is no original tendency to prefer selections with a moral implication. Neither do these repel. This is not to say, however, that there is no preference for a right outcome, for the triumph of the true and good. There is nothing in the material or the results of these tests upon which any conclusion on this point may be based. As for the *narrative*, the neutral value of its form alone is not surprising. We have all been bored by tedious accounts of happenings uninteresting in themselves. We may recall the ancient *Story without an End* in which the monarch was wearied to such a degree by the detailed account of the removal of a storehouse full of wheat, grain by grain, "And another bird came and took away another grain," that he offered his kingdom and his daughter if the storyteller would only cease the tiresome iteration.

Throughout this investigation nothing has been found which, from the standpoint of interest, warrants the highly partial selection at present characteristic of primary readers. Nothing here indicates that the child is in an "age of pure fancy" nor that legends and folk tales as a class are the most interesting of all possible material for primary pupils. As for poetry, the evidence is all against, rather than for, its very large proportion in primary reading material. Instead of this limited range of liking, a child's tastes appear rather catholic. Give him a few important elemental qualities which may enter into fact or fiction, into prose or verse, into real or fanciful situations, and he is attracted and pleased.

Nor is there any indication of a necessity for sex differentiation. In general, there are certain differences in degree between some of

the preferences of boys and girls. If a wide range of reading matter is available for all it will provide both for the general tendencies and for individual differences within each sex. For it must be remembered that the three elements, *animalness*, *familiar experience*, and *childness*, which are notably significant in the interest of one sex, are all positive in value for the other sex also, and that *surprise* and *plot* are important interest determiners for both.

Interest, in fine, offers no obstacle to an all-round selection of primary reading material. The qualities which are important as factors of interest may, by skillful authorship, be embodied in almost any class of reading material. What is needed is this skillful treatment of fields hitherto neglected or taboo in primary reading books, together with wise and balanced selection among the enormous amount of matter already in existence in more favored classes of material.

CHAPTER VII

VARIATIONS IN INTEREST AND THEIR CAUSES

The preceding chapters have been concerned with general tendencies indicated by the test returns. General tendencies and averages, however, are only half the truth; the nature and extent of variation from the central tendency are equally important. The former afford criteria and principles which apply on a large scale, the latter protect against undue expectation of uniformity in the reactions of human beings, and induce recognition of and provision for individual differences.

A striking characteristic of the percentages of group preferences in the case of any given pair of samples tested in this study was their variability. The following representative distributions have been taken at random from the returns, the first four cases being percentages of boys' preferences, the last four cases of girls' preferences:

Case A:	3, 18, 23, 25, 29, 30, 33, 40, 44, 50, 64, 67
Case B:	0, 0, 27, 42, 54, 58, 59, 60, 63, 65, 70, 82
Case C:	0, 7, 11, 19, 27, 29, 33, 50, 60, 61, 63, 80
Case D:	25, 41, 44, 63, 71, 75, 78, 80, 80, 80, 89, 89
Case E:	7, 24, 27, 29, 30, 36, 40, 43, 43, 54, 63, 81
Case F:	10, 22, 25, 40, 42, 43, 48, 55, 74, 85, 86, 100
Case G:	8, 28, 29, 40, 44, 47, 47, 63, 71, 71, 87, 88
Case H:	0, 0, 7, 8, 10, 10, 13, 15, 20, 20, 67, 83

It may appear that such a range, without any discoverable mode, should have been corrected by the use of more classes for each pair of samples. This was tried, but the following distribution of boys' and girls' percentages of preferences respectively, for a pair which was read to seventeen classes instead of to twelve, indicates that only from an increase so large as to be prohibitive might a normal distribution of returns have been expected; Case I, boys: 0, 0, 14, 17, 20, 26, 36, 43, 44, 45, 50, 60, 64, 67, 69, 100. Case I, girls: 25, 29, 29, 30, 33, 45, 47, 50, 57, 69, 73, 75, 77, 86, 92, 96, 100.

All this variability is probably due to one or more of three large causes. The first of these, as has already been noted, is the narrow range within which all the samples lie. With a total difference of no more than 2.5 P.E. between the highest and the lowest of 31 samples,

the average difference between any two of consecutive rank is less than .1 P.E. This means that the average of preference for any one sample over that next below it in rank is only 53%, or little more than a chance distribution. Where the scale is so evenly balanced, very slight causes are able to produce results out of all proportion to their importance. It is difficult to see how this factor of variability can be eliminated in a study of any practical value. For it must always be in the upper interest ranges that any material will lie which is seriously considered as subject matter for children's reading.

The second cause of variability is the composite nature of any reading selection. Into it enter theme, style, characters, and many other elements, so that it is not one fact that is being measured, but a complex of many, a condition from which a unimodal distribution cannot be expected. This difficulty may be decreased or obviated by limiting the range of selections tested or by alteration of samples for purposes of comparison. Thus the field might be limited to include only samples of history and fiction, or of narrative and lyric verse, carefully selected so as to be fairly equal in important interest factors, such as plot, conversation, liveliness, or animal characters. Or samples with the element to be studied either added or subtracted, might be compared with the same samples before alteration. Indeed, the returns from this more general study indicate the importance of further investigation into a number of the narrower fields here included.

Finally, variability results from the individual and group differences of the pupils and classes studied. This was to be expected, and is desirable, since only from the reactions of a wide range of individuals can the general tendencies common to all individuals of their age-group be determined with any assurance. Were this the only cause of variability in the expressed preferences, a sufficient number of random cases would present a distribution of the normal type with a distinct central tendency.

With, however, the reading material to be tested a complex of many interest factors, existing to varying degrees in the different samples; with a complex also of human sensitivities in the individuals and groups who expressed preferences among this material; and finally with large opportunity for the action of chance, due to the slight and sometimes almost indistinguishable differences in a

pair of samples, the wide and apparently multimodal distribution of our returns is to be expected, is, indeed, unavoidable.

Both the amount of this variability and its causes are valuable to educational theory and practice. The amount is important as an indication of the desirable range of reading curriculum material, which should be selected not only in the light of the average or general tendency of children's interests, but also of the likings of children in particular, those who vary from the mean as well as those who closely approach it, the aim in every case being realization to the full upon the capital which each child's initial stock of interests affords.

Of the causes which have been cited to account for the unusual variability of the results of this study, only those which are a matter of differences in individuals or in groups are significant in relation to its purposes. The composition of reading material or its general high quality are here only situations to which children respond in various ways; the important matters are the children's individual and group differences in responding, and the causes either in heredity or environment that produce these varied responses to stimuli, which, however complex, are practically the same for all.

Both the likenesses shown by general tendencies and the differences indicated by variability are in fact to be accounted for. For this purpose, besides what may be drawn from the statistical data and conclusions, there are certain indications in facts available as to the composition of various classes and in spontaneous reactions of the children aside from those called for in the test directions. These are in no sense conclusive, but are assembled in the following pages for what light they can throw on the causes of variability in interest and the possibility of interest development.

There is ground for the belief that certain sex differences here shown are innate, whereas others are probably acquired. The preference of boys over girls for *animalness*, and of girls over boys for *childness* and *conversation*, are probably cases of the former, whereas it appears possible that the reaction in favor of *same-sexness*, and against *other-sexness*, is an illustration of the latter. There is not in the case of children as young as these any difference in contacts or experiences in the three fields first mentioned. Boys and girls under nine or ten play with children, have animal pets in common or interchangeably, and share in the same conversations.

No social tradition or taboo has as yet been brought to bear upon the boy to induce in him the belief that affairs of children are beneath his dignity, nor have little girls been chided for romping with kittens or dogs, or for an interest in pigs or cows or ponies or animals of the circus. Parents commonly call the attention of children of either sex to animals passed by the roadside or seen from the railroad train. Chattering and listening eagerly to the conversation of others is not thought of as peculiar to either sex in the case of small children. The child who talks over much is a "chatterbox," one who listens eagerly is a "little pitcher." Both terms are nouns of common or neuter gender. But children with certain other over- or under-developed traits are early branded as "tomboys" or "sissies." "Don't be a girl," is a common reproof for the small boy who cries at a slight hurt.

Whether or not such uncomplimentary references by adults to supposedly feminine traits are its cause, a conscious attitude of superiority of boys over girls begins to appear even in the primary grades. In a first grade, the selections *Epaminondas* and *The Water Dolly* were read. After the voting was done, one boy was heard hooting at his neighbor. "He's a girl," he jeered. "He voted for the Dolly story." After the votes were collected in another first grade, a boy was trying to tell the reader which one he liked best of all, but could not remember the stories' names. They were suggested to him one by one, and when *The Water Dolly* was thus named, he exclaimed scornfully, "You don't think I'm a girl, do you?" It is not surprising, therefore, that a distinct consciousness of preference or antipathy for the girl or boy element in a story is developed by the third grade. A 3B grade of boys in a New York City public school voted 38 to 0 for *How the Horses of the Sun Ran Away*, when that story was paired with *Candle Making at the Coolidges*, and gave as the reason for their unanimity the fact that the latter was "about girls." (As a matter of fact, a mother, grandmother, two grown sons, and one little girl figured in the story, and the cause of the grade's preference was probably far more complex than they themselves realized.) Being told that *Bessie Brandon's Guest*, read in the same period (and for which they had expressed a preference of 23 to 6 over *Boots and His Brothers*, paired with it) was also about girls, their reply was emphatic, "That's about George Washington." Both sexes in still another third grade expressed the same attitude. *Boots and His Brothers* was compared with *East of the Sun and West of the*

Moon. The boys voted 100% for the former, the girls 100% for the latter. Asked why they chose the stories as they did, the boys said they liked Boots because it was "about a boy," whereas the girls stated that their choice of the other was because it was "about a girl." Whether this attitude is innate or acquired, it is undoubtedly raised into consciousness in the minds of both sexes before the end of the primary grade period.

Another interest to which training certainly contributes is that in stories about Washington. There were two such stories in this test, sample 3 and 16, the former telling of a little girl's encounter with Washington, the man, the latter of an incident of his boyhood. The former ranked fourth for girls, and tied for second place for boys; the latter stood first in boys' preferences, and tied for eighth place in girls'. Again and again the children stated as their reason for liking these stories that they were "about Washington." One such statement was quoted in a preceding paragraph as an explanation of the preference for number 3 over a fairy story with a boy hero, which in general occupied a high place in the boys' liking. A second grade girl, voting on samples 16 and 17, said, "I knew which it would be as soon as I heard the name. I always do." She voted for number 16, and apparently meant by her statement to indicate a constant preference for stories about Washington. Other reasons given for voting for this sample were "Because it is our country," "He was our first president," "It is patriotic," "Our flag is in it," "He told the truth." That this definite and conscious preference was to some extent due to the fact that these tests were given in the spring of 1918, when patriotic enthusiasm was at white heat, is most probable. This is, however, but added evidence of the effect of environment in developing interests.

The votes of the negro pupils in a few grades in which they made up a considerable per cent were interesting in this connection. There were twelve such grades with from one-third to two-thirds of the class negro, all in the same New York city school. To four of these grades one or the other of the George Washington stories was read, with a resultant vote showing decidedly less interest in this hero on the part of the negroes than was the usual case with white children, or than was the case with the white children in this school. There were 89 white and 55 colored children here tested with these samples. The white children's combined votes gave a total of 53 to 36 in favor of

the George Washington stories; the negroes' total was 18 for these stories to 37 against them. In one of the four grades, a class of 3 B girls, the negroes gave a larger per cent to *Bessie Brandon's Guest*, paired with *East of the Sun and West of the Moon*, than did the whites, 50% negro, 39% white. In each of the other three the per cent was lower, 11%, 70%, and 15% respectively for negroes as compared with 35%, 100%, and 67% for whites, for the pairs 16-24 with 3 B girls, 16-15 with 3 A boys, and 3-10 with 2 B boys. In the last pair, particularly, the negro boys reacted strongly in favor of the story of a boy hero, *Boots and His Brothers*, as against a girl's story, *Bessie Brandon's Guest*, just as the white boys would also have done if they had conceived the latter as a "girl story" and not a story "about George Washington." A possible explanation of the difference would be different training. These negroes in considerable numbers were recent arrivals in New York, being part of the exodus from the South that took place during the war.

These data are so inconclusive that they would not be worth citing had this lack of agreement not been the general tendency in the votes of the white and negro pupils of this school. Their correlation by the method of unlike signed pairs was, it is true, .72, but the trend of the total negro votes in 22 classes was in the direction opposite to the whites, and in only 7 of these classes were white and negro votes approximately the same in both direction and percentage.

Besides the difference in George Washington stories, there was considerable difference in stories dealing with simple home life of a rural or household type. It was such a story, *Bessie Brandon's Guest*, that received from 3B negro girls the highest vote of the negroes for a George Washington story, and the only percentage of negro votes for such a story which exceeded that given by white pupils in the same grade. It was such another story, *The Husband Who Kept House*, to which another group of negro girls gave 89% of their votes when it was compared with *George Washington and the Colt*. In three grades, samples 6 and 5, *A Chinese School* and *Candle Making at Coolidges'*, were paired, and in every one the negroes' percentage of preference for number 5 exceeded the whites, being 74%, 80%, and 88% for negroes as against 40%, 74%, and 57% for whites. The story of *The Johnny Cake* paired with *The Water Dolly* received 82% of negro and 54% of white votes, and

paired with *Epaminondas* 61% of the former and 47% of the latter. *The Honest Woodcutter* was preferred to *Boots and His Brothers* by 59% of negro boys, whereas the white boys in the same grade gave a 53% vote to the other selection. When compared with *The Lion and the Mouse* in a first grade, *The Honest Woodcutter* received 86% of the negroes' votes as against 72% of the whites'. While some of these differences are not large, and all of them together are not conclusive, they do tend to suggest that the negro children, because of the apperceptive basis afforded by the country or small town environment in which they had probably grown up, had different interests from the children who were native to the city. It could hardly be that race and not environment accounts for what difference exists, for no race could be instinctively set against an interest in George Washington; nor instinctively set for an interest in cooking breakfast; making a Johnny cake and following it through mad experiences with cows, hens, and pigs; dipping candles with the paraphernalia of a big kettle and an open hearth; churning, minding the baby, and feeding the cow; or chopping wood in the forest. These are the homely experiences recounted in those stories which negroes prefer above white children, and in which it is here suggested they have an interest because the circumstances of their lives have possibly touched most if not all these experiences and hence have provided a basis for understanding and enjoyment. If this be a true supposition, it is in line with the indication of a general liking for Washington stories, that environment is to a large degree a determiner of interests, and that such determination begins when experience begins. And both of these are in line with the positive correlation of *interest* and *familiar experience* obtained when the crude correlations are changed to extended partials.

It has been hinted above that better comprehension is probably an element that enters into whatever value *familiar experience* has as an interest factor. It seems quite likely that some part of the reason why *Candle Making at the Coolidges'* falls so low in the primary children's interest scale, is their failure to get its meaning, because their experience has not included hearths, kettles, candle rods, or indeed much of what went to make up the colonial scene which it presents. Hence as it is read to them they get only a hazy impression, which grows irritating before the ten minutes it takes to read the story are at an end. Their restlessness and wandering attention

suggests this. Questions asked in many grades at the conclusion of the voting on this story brought out clearly the fact of lack of comprehension. No class thus questioned sensed what candle dipping meant; candle moulding was all that any of them knew. A picture or objective demonstration would have cleared up the meaning, but the lengthy description of the process did not. On hearing the statement read that Mrs. Coolidge "made the wicks ready", one child said, "You mean wax." At least one third grade child volunteered the statement that she did not understand the story. That fuller comprehension would add to the interest in this story is evidenced by the fact that it has done so. It was read to a third grade which gave it only 37% of its votes when compared with *A Chinese School*. The teacher of the grade, however, who was struck with the possibilities of the story, reports using it in several classes since that time, with all necessary illustrations and related activities, including a visit to the candle room in the museum of the Jumel mansion, and states that the children like it very much.

Another little understood sample was *One, Two, Three*, a story in verse of a little lame boy who played an imaginary game of hide and seek with his grandmother, neither of them actually stirring from their chairs. One child definitely stated that he did not understand that poem at all, while others showed the same lack of comprehension when questioned. However, no data are available to indicate whether it would have been better liked had the meaning been grasped.

Indications as to the effects of the familiarity of a selection point both ways. In a second grade the preference for number 21 over 20 was 100%. Asked why they all liked the former better, a girl replied, "Well, you see we knew *The Swing*; we had had it so much." In the same grade, on another day, a boy, explaining why only five of the class voted for *Proserpina*, said, "You know why? Probably they had heard it before or something." One of the two highest preferences given by boys for *Bessie Brandon's Guest* over *Boots and his Brothers*, 85% of the votes, occurred in a 3 B class, composed altogether of boys, who had had a story similar to the latter in a preceding grade. A little girl in another third grade stated that she believed she would vote for *The Water Dolly* because she had heard *Epaminondas*, which was paired with it. The children of yet another third grade had heard all the four stories to be read to them that day

(numbers 13, 14, 25, and 26), and were quite frank in their distaste for hearing them again. They were noisy and restless, and made adverse comments. The teacher of a 3B grade to whom *Proserpina* and *Bessie Brandon's Guest* were read, stated that the latter was new, but the children "knew *Proserpina* by heart." They voted 91% in favor of the new selection. In the same grade, samples 21 and 31 being paired, the children voted 69% for the latter. The teacher said that this preferred selection, *The Jumblies*, was new, but the class had known the other, *One, Two, Three*, "ever since they were in the first grade." She asked if it was not usually found that children preferred new material, and evidently believed that they would. In a second grade, where numbers 16 and 24 were compared, it happened that the teacher had just the day before read the latter to the class. They voted 71% in favor of the former. In a third grade, where the same two samples were compared, the children knew the former, and, although it was read in the favorable second position, 78% voted against it. A first grade of boys had dramatized *The Old Woman and the Pig*, and voted 69% for *Mother Hubbard* which was paired with it. A second grade knew *The Honest Woodcutter* and spoke of it as "That one we dramatized"; 89% of them voted for *The Queen Bee*, with which it was compared. Another second grade which had read *The Swing*, gave 93% of their votes to *One, Two, Three*. Another with the same pair was more emphatic yet, giving 100% of their votes to *One, Two, Three*, which was new to them.

About as many and as weighty cases to the contrary can be cited. A first grade was read *The Water Dolly* and *Epaminondas*. Several of the children knew the latter well, and could not be prevented from telling each other what was going to happen as the story progressed. In this class 92% voted for the known selection. A third grade was read two stories they had had before, numbers 17 and 18. They were loud in their expressions of liking for both these stories. One little girl kept saying, "I love it," and it was with difficulty that she decided between them. Another second grade had heard both *The Old Woman and Her Pig* and *Mother Hubbard*, but were not averse to hearing them again, rather the contrary. The same thing was true of these two samples in the same third grade that had protested so vigorously against hearing 13, 14, 25, and 26 again. A first grade which was familiar with *Mother Hubbard* voted 67% for it against *The Jumblies*. A class of third grade

girls which gave two-thirds of its votes to *The Honest Woodcutter* in preference to *The Queen Bee*, had dramatized the former. A first grade which knew *The Gingerbread Boy* voted 69% for *The Johnny Cake*, which is practically the same story, when it was compared with *Epaminondas*. Another first grade, whose teacher had told them the story of *Epaminondas*, gave it 63% of votes against *The Johnny Cake*. The teacher of a 3B class was very fond of *One, Two, Three*, and had read it to her grade of boys. When it was compared with *The Jumblies*, they gave the former a preference of 59%. A second grade had among its members one little girl whose mother was born in Holland, another who had been there. Their teacher had read them stories of child life in that country, similar to *Boys and Girls of Holland*, which was paired in their class with *A Chinese School*, receiving 66% of the votes.

Just what conclusion is to be drawn from all this it is difficult to say. Certainly it cannot be claimed that familiarity may be counted upon to popularize a selection, yet it is equally sure that it cannot be premised that it will breed contempt. Probably some of the difference is due to the nature of the child's past experience with a piece of reading matter. It may have been monotonously treated or tiresomely drilled upon. The teacher may or may not have handled it with appreciation.

Possibly, on the other hand, the reaction against the known is due to the entire absence of the element of surprise, which appears so important a factor in interest. A child perhaps likes to hear a selection until he has exhausted its possibilities of new experiences for him, especially if it has many positive interest factors but is vague in a few places. There may be another phase, however, besides that of meaning or concept. A selection may not merely inform, but it may stir. The best known musical compositions are the best loved and the most enthusiastically greeted at any concert. There should be something corresponding to this in literature, if all its values are realized. There can be no question that the unfavorable reactions of so many children to familiar reading material should warn against undue confidence in the common idea that "the familiarity of selections is a guarantee of the child's desire to read them again." But on the other hand it seems equally evident that the teacher should question her own methods when they develop familiarity only to breed distaste.

There is little doubt as to the existence of effects of age and advancement on interest. Certain selections commonly taught in the lowest primary grades do not hold the full attention of third grade pupils, whether because of differing interests in the pupils or because of the familiarity of the story. Certain of the longer stories which interest third grade pupils greatly do not hold the attention of first grade children. Length of attention span perhaps enters here. This probable difference between interests of children of early and late primary grades may account for a part of the wide variation in percentages for the same pair of samples, though the variation is still large when only one grade's votes are considered. There were two pairs of samples, 23 and 29, and 22 and 27, which were read only to first grade children in New York City schools. The percentages of boys' preferences for the former pair were 25, 33, 38, 44, 49, 56, 67, 67, 69, 71, 88, and 100, and for the latter 13, 19, 29, 31, 33, 37, 40, 41, 46, 47, 50, 53, and 58. Samples 1 and 5, and 1 and 16 were paired in reading to only third grades in New York city. The resultant boys' percentages of preference were for the first pair 67, 67, 69, 71, 75, 83, 88, 89, 96, 96, and 100, and for the second 13, 13, 19, 24, 33, 38, 43, 43, 45, 50, 53, 81. No attempt is made in this study to discover either the nature or the extent of the differences which may exist between the several primary grades. These grades are here treated as a unit. Except in a very few cases, every grade has voted on every pair of samples, but there are not enough votes from any one grade to afford results of a reliability that would warrant their careful analysis, and no superficial indications appear except those reported above. It is desirable that studies limited to each of these grades be undertaken.

In conclusion it may be stated that whereas individual differences in native interest tendencies undoubtedly exist, environment, including education, the natural experiences of the home and their artificially devised supplementation in the school, have large effect. Age, sex, advancement, comprehension, the experiences upon which reading matter is based, and the method of its presentation, all appear to share in the modification and development of the original stock of interests.

CHAPTER VIII

ADULT DISCERNMENT OF CHILDREN'S TASTES

It was stated in a preceding chapter that the selection of primary reading material in the past has been governed by adults' opinions as to its merits as literature and its interest for primary pupils. Whether the adults' judgment is a fair criterion of primary interest should determine whether this method of selection is as desirable as it is simple. Certain data upon this point, obtained in the course of this study, are discussed in the following pages.

The first evidence here afforded of the value of adults' judgments is found in the initial ranking of the nearly 250 samples from among which the thirty-one specimens tested were eventually selected. Diversity and variability were the chief common traits in the opinions of these judges. Sample 1, "America," for example, was ranked 1, 3, 5, 6, 8, 8, 9, and 9; sample 97, "How the Leaves Came Down," 2, 2, 3, 3, 6, 7, 8, 10; sample 236, "What Does Little Birdie Say?" 1, 1, 2, 4, 4, 5, 8, 10; sample 243, "Who Killed Cock Robin?" 1, 1, 1, 2, 3, 5, 7, 10; sample 172, "Pocahontas," 2, 3, 4, 5, 6, 8, 9, 10; sample 190, "Raphael," 1, 2, 3, 4, 5, 7, 8, 9; sample 237, "Washington and the Cherry Tree," 1, 1, 2, 5, 7, 8, 9, 10; sample 22, "The Brave Tin Soldier," 1, 2, 3, 4, 5, 6, 8, 10; sample 40, "The Crow and the Pitcher," 1, 2, 3, 4, 5, 6, 7, 9; and sample 138, "The Little Pine Tree," 1, 2, 3, 4, 5, 7, 8, 9. Even where there was general agreement, one or two judges were quite likely to differ widely from the majority. Thus sample 132, "Little Boy Blue," was ranked 1 by five of the judges, and 2 by another, but 5 and 9 by the remaining two. Blake's poem, "The Lamb," sample 117, was ranked 8 by two judges, 9 by three, and 10 by two, but one judge put it in the first place. These are all extreme cases, but there are many which approached them. The unavoidable conclusion from the inspection of these distributions is that whereas the consensus of opinion of many adult judges may be a safe guide to children's interests within the range of such material as this, the opinion of one is hardly more valuable than a random selection.

Is the consensus of opinion of many a safe guide? Some evidence

has been obtained on this question. The ranks of the 31 tested samples, as derived from children's expressions of preference, were correlated with their ranks as they were given by these eight expert adults in this large number of selections, the resultant r 's being .043 for boys' interests and adult judgments, and .166 for girls' interests and adults' judgments. That is to say, the rank value assigned to these samples on a basis of adult opinion was for boys no greater than a random selection would have afforded, and for girls but little more.

As a crude means of verifying the surprising lack of correlation shown above, the 31 samples of the test were presented for judgment to a large college class in Juvenile Literature. They were familiar with nearly all the selections, and the nature of the unfamiliar ones was briefly described to them. The samples were then distributed, one to each student, and they were asked each to read the sample held, and mark it on the back of the sheet 1, 2, 3, 4, or 5, according to the relative degree of interest among the whole set of 31 which they judged it would have for primary children. As fast as a sample was ranked it was passed on and another taken. A large number of judgments was thus obtained, ranging from 18 to 78 for the various samples. The correlation of the average of this class's rankings with the ranks given by children was much higher, +.379 for boys and +.501 for girls, but, it will be seen, still lower for the former than for the latter. Six months later exactly the same procedure was followed with another college class in Juvenile Literature. Again a large number of judgments, whose averages this time correlated +.272 with boys' interests and +.333 with girls', was obtained.

Taking them as a whole, these three sets of adult judgments do not indicate very great value in their unaided opinions as ground for the selection of primary children's reading material.

Somewhat more encouraging are the returns from a few individuals who have ranked the samples for children's interest. Nine such ranks have been obtained, three from university women graduate students in psychology and education in Illinois and Johns Hopkins universities, and six from men, including a graduate student in education in the University of Illinois, three students of psychology and elementary education in Johns Hopkins, a college teacher of education, and a university professor of educa-

tional psychology. The correlations of their rankings with boys' and girls' interests respectively are as follows:

<i>Judge</i>	<i>r, Boys</i>	<i>r, Girls</i>
Woman student, Johns Hopkins .	.247	.19
Woman student, University of Illinois	.296	.45
Man student, Johns Hopkins . . .	.396	.391
Woman student, University of Illinois	.454	.481
Man student, Johns Hopkins .	.535	.497
Man student, University of Illinois	.45	.688
Man student, Johns Hopkins	.514	.551
Man, teacher of education . . .	.518	.623
Man, professor of psychology	.728	.714

These facts, inadequate as they are, should suffice to protect against dogmatic assurance on the part of any teacher as to what her pupils will, but particularly as to what they will not, like; should suggest the advisability of providing a rich reading environment, of wide range, in which every legitimate interest may find food for development; and should stimulate to further scientific investigations, since conclusions and opinions of only empirical basis appear of such uncertain value.

CHAPTER IX

FINAL SUMMARY AND PRACTICAL APPLICATIONS

The general recognition of the importance of interest in education and human affairs is shared by makers of primary reading books. There is, however, little of reliable knowledge, though much of empirical opinion, as to the nature of primary children's interests. Investigations in the field of children's interests have only touched the upper edges of the primary grades, and the conclusions from these studies have been expressed in terms of elementary children in general rather than of those of any limited age or grade groups within that field. The results of these investigations indicate catholicity of taste, some sex difference, a strong interest in animals, probable liking for stories of daily life experiences, and a deficiency in liking for poetry in lower grades, in spite of which, however, poetry and fiction are affirmed to be "the preferred forms." Partial selection and inadequate analysis to a considerable extent detract from the reliability of these conclusions.

The contents of primary reading books indicate an absence of any general agreement as to what specific selections should be included, though there is very general agreement as to the classes of literature in which they should fall. Poetry and fiction, especially folk tales, constitute all but a practically negligible amount of primary reading material. The percentage of matter intended for belief does not exceed 4% of the total.

The present limitation of classes from which reading material is drawn is a modern development, readers a generation ago having been characterized by a much wider range of subject matter.

The present study is an inquiry into the interests of children of the first, second, and third grades, its data being derived from children's expressed preferences between the members of a pair of samples read to them for comparison, forty such pairs having been constructed from a total list of 31 selections of reading matter. These selections included verse, fictional prose of several types, and factual material, and were selected from a list of approximately 250 samples for their probable high interest value for children of these grades. The results from these expressed preferences were com-

bined in the making of a table of the relative values and ranks of the 31 tested samples in the interests of primary boys and girls respectively.

The samples were then ranked by adult judges for the degree to which they were characterized by the presence or absence of twenty qualities which it seemed likely would affect interest. These qualities were *verse form, style, humor, surprise, plot, liveliness, fancifulness, realism, repetition, imagery, familiar experience, conversation, poeticalness, boyiness, girliness, childness, adultness, moralness, narrativeness, and animalness*, the latter abstract nouns having been coined to express the existence of the characters or qualities which they name. The ranks for each of the samples, as derived from the combined adult judgments, were then correlated with the interest ranks for boys and for girls to determine which qualities showed an effect on interest, and whether this effect was favorable or unfavorable. Finally the crude coefficients of correlation which seemed of significance were freed from the irrelevant effects of one or more coexistent qualities by the statistical procedure of partial correlation.

Interest characteristics of children are evidenced both by the analyzed and the unanalyzed data thus derived. The ranks and values which the 31 samples assumed in the interests of boys and girls presented several significant characteristics. The narrow range of value within which all the samples fell was particularly notable, indicating that they were all of high interest value, probably none falling lower than the upper quartile of all possible primary reading matter. Equally striking was the extremely low position of the verse samples, both for boys and girls. The history samples occupied both very high and very low ranks, the combined evidence of their several positions giving no indication of inferiority of history *per se*, but rather the contrary, and suggesting that not the class, but the elemental qualities within the individual specimen of the class, determine the interest reaction of the child reader. Sex differences were indicated in a number of cases.

As a result of the correlation of interest ranks with those for the twenty possible interesting qualities, the latter appeared to divide into those of high positive significance, those of negative effect, and a middle group of probable slightly favorable or indifferent influence. *Surprise, plot, narrativeness, liveliness, conversation, animalness*, and

moralness appeared most effective in arousing interest among both boys and girls. *Fancifulness*, *repetition*, *childness*, *poeticalness*, *same-sexness*, *humor*, and *verse form* showed interest values of varying amounts, but none considerable. *Adulthood*, *style*, *other-sexness*, and *realism* seemed to repel, rather than attract. The importance of *imagery* and *familiar experience* was uncertain, slightly above or slightly below indifference, and different for boys and girls. In general there was high correlation between boys' and girls' reactions to the several interest elements.

Partial correlations more or less extended revealed that a number of these interest factors owe their apparent significance to a favorable coexistence with other actually valuable factors, whereas in a few cases it became evident that elements of positive weight had been overbalanced by the unfavorable qualities with which they were associated, so that their ranks failed to indicate their true importance.

Of the seven apparently most significant factors, *surprise* retains the lead for children in general, with *plot* second, though depreciated in value. *Animalness* for boys is raised to a level with *surprise*. *Conversation* is shown to be indifferent or slightly repellent for boys, but of minor positive value for girls. *Narrativeness* and *moralness* fall to zero effect, and *liveliness* shows itself probably somewhat negative in value. Out of all the other elements freed from the complication of coexistent qualities only two prove important, *childness*, and *familiar experience*, both of which for girls rise to paramount and practically equal importance, exceeding even surprise. The value of both of these for boys, however, appears only slightly positive. *Repetition* shows minor positive value for girls, but little if any for boys. *Moralness* and *narrativeness* are indifferent, *fancifulness* and *verse form* perhaps even negative, as is *liveliness* for boys and perhaps also for girls. Certainly none of these has any positive interest value. *Humor* except of a very broad type is markedly repellent, more so for boys than for girls.

Along with the general tendencies indicated above, individual and group differences are to be considered. In general, there is a very large variability in different classes' percentages of preference within any one pair of samples. This is attributable to the narrow range of interest values within which all the samples fall, and to the complex constitution of any one sample, embodying as it does many

interest factors, as well as to the individual differences of the children composing the same class or different classes. Several causes of individual differences of pupils are suggested by the statistical data and other notes collected during the progress of the study. Sex differences are probably in part native, in part acquired as a result of the social environment. The natural environment probably to some extent determines interest by affording differing apperceptive bases in different individuals and groups. Effects of the supplementation of environment provided in school education are also indicated, both as augmenting and as decreasing interest. Whether a familiar selection is willingly heard again appears to depend in part upon its former presentation, and in part upon the degree to which its conceptual values are yet unrealized. Interest is affected by age and advancement, but whether because of familiarity or of mental growth, including extended attention span, can not be stated.

Further studies in this field are needed, to verify, extend, and supplement what has already been done. This is essential if children's interest is to be used as a criterion in the selection of their reading material, for the reason that adult opinions, individual or collective, are highly uncertain in value. In individual cases they may be of high reliability, in others little superior to random selection, such differences having been found among highly expert primary teachers and educators.

Practical applications or desirable outcomes of the preceding are mainly in the fields of curriculum and textbook making, and of further statistical investigation. The great variability of interest shown by children in the primary grades as a whole and indeed within the range of a single grade, indicates the necessity for an equally wide range of reading material in these grades. Generally accepted practice to-day limits primary school reading within the field of literature. The justifiability of this practice is here questioned. The ends which reading is to serve in life include information and interchange of ideas and practical experiences, as well as enjoyment of an art product. Since all these ends exist, reading curricula should develop abilities and motives for each. If it is true that "children regard the library not as a storehouse for knowledge, but as a storehouse for stories," is it not to some extent because the interest in stories is gratified and nourished and the interest in

knowledge neglected and starved in the early years of reading experience? The interests displayed by children offer no justification for any narrow limitation of the field of primary reading material, and certainly not for the exaltation of poetry to over 50% of its selections. Apparently the only universal characteristic of children's interests is their catholicity. No recognized class of reading material claims all their attention. Hardly any, however, except humor, appears to claim it to a less degree than does poetry. Children like the story, or plot element, but they like it whether it appears in fiction, in verse, or in historical prose.

If an interest in any class of reading matter is desired in the future, related interests in the present should be sought out and nourished. Enjoyment of history, travel, and biography in later years would seem to be forwarded by some use in primary years of such material, so selected and presented as to incorporate a considerable number of interest factors, rather than by a studied omission until other and more favored types of reading matter have had opportunity to develop a formidable advantage. Similarly, a taste for poetry might in more cases be developed were story poems dealing with child and animal life, rather than lyrics and more or less introspective meditation, especially emphasized in early readers. No criticism is here offered of the use of lyrics in song; "songs were made for singing," and it is probable that association with the attractions of music will do more than any other means to develop a taste for their own more elusive or subtle melody and feeling.

The whole field of primary reading matter needs to be overhauled. The enormous mass of folk lore and miscellaneous story needs critical evaluation, out of which should come selection of a core of minimum essentials, to become a part of every child's common inheritance of the mental and spiritual treasures of the race. Some of the rest should be available for the child who would further gratify his tastes in this line; some should be rejected as too trivial or meaningless to justify the expenditure of valuable learning time when so much that is better is waiting to be known. Undoubtedly what is kept will be high in the elemental interest factors; it is they which have preserved it through the generations. A similar selection should be made in the field of poetry.

The neglected fields of fact—history, biography, travel, industry, art, and natural science—all need development; not a crude rehearsal

of ill-selected fact, but skillful composition, incorporating salient interest-producing elements. There are a few such books to-day within the reading ability of primary children, but there need be many more, opening doors into many fields, and attracting the developing intelligence out to pursue paths which lead on into widening interests and worthier thoughts.

The content of school reading, in fine, should from the earliest years be as broad as young life itself. No field to which a dawning interest points should be arbitrarily excluded, but rather the aim should be to afford a range of material inclusive enough for the development of all wholesome interests that already are active, and stimulating enough to wake others into flower.

Further studies which appear especially important include inquiry into the interests of children at different levels of advancement in the primary period, more specific investigation into the attractiveness of various types of factual material, and a study of poetry to determine whether it has really so insignificant an effect in the production of interest as the samples of this test display, or to discover what kinds or what elements of poetry do have attractiveness as reading matter for primary children.

VITA

FANNIE WYCHE DUNN was born in Petersburg, Virginia, January 17, 1879. Her early education was received from her mother, her school days not beginning till she entered the seventh grade of the Petersburg public schools. She was a student in these schools until her graduation from the high school, except for a year of high school work in the secondary department of John B. Stetson University, Deland, Florida. After graduation from the Petersburg High School in 1895, she attended the Peabody Normal College, in Nashville, Tennessee, from which she was graduated in 1897, with the degree of L.I. In the fall of 1913 she entered Teachers College, Columbia University, from which she received the degree of B.S. in 1915, of A.M. in 1917. She held a graduate scholarship in 1916-1917, and the Grace H. Dodge Fellowship in 1917-1918.

From 1897 till 1903 she taught in elementary and secondary schools, public and private, city and country, in Virginia and Missouri. From 1903 to 1910 she was supervisor of third and fourth grades in the Training School of the State Normal School at Farmville, Virginia. In 1910 she became supervisor of rural schools in the counties of Nottoway and Amelia, Virginia, under the auspices of the Peabody Education Board and the State Normal School, Farmville, Virginia. From 1911 to 1913 she was principal and director of normal training in the Normal Training High School at Crewe, Nottoway County, Virginia, and instructor in rural education at the State Normal School, Farmville, Virginia. In 1914 she established the Department of Rural Education in the State Normal School, Farmville, Virginia, and was in charge of this department until 1916, when she resumed her studies at Teachers College. From 1917 until the present time she has been an instructor in rural education in Teachers College.

